The Builder.

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Monsieur Duc and some of his Colleagues.

THIS year, in accordance with custom, the Council of the Royal Institute of British Architects has nominated a foreigner for the distinction which the Queen is pleased to bestow annually upon some person who has contributed by a work of art or literature to the general advancement of civil architecture. This nomination will be submitted to a special meeting of members on the second Monday in next month, when, if it be, as it obviously will be, approved by the general body, the council will lay it before her Majesty. The gentleman to whom the Royal Medal will then be offered is Monsieur Joseph Louis Duc, architect of the Colonne de Juillet and the later buildings of the Palais de Justice in Paris.

It may, perhaps, be opportune to add, for the benefit of our foreign readers, and perhaps also for some of our English ones, that the Royal Institute of British Architects is a guild of professional men constituted under a charter granted by King William IV. to its first president, the late Earl de Grey. Here, in England, similar art corporations are comparatively young. The Royal Academy itself was only incorporated in 1768; and although it includes a school of architecture, with professors and masters, its reputation is derived from an almost exclusive cultivation of painting and sculpture. The corporation of British Architects was founded only a little more than forty years ago; and one of the founders is still an enthusiastic participator in its transactions. British science, on the contrary, has had a home and kindred associations since the days of Charles II.; and, if judgment by results be worth anything, it may safely be asserted that these societies, associations, or corporations, however they may be called, have a vast influence upon the spread and development of the particular *culte* it is their province to foster; for some scientific aptitude is as much the inheritance of educated Englishmen as artistic culture is of Frenchmen in general. In this regard the French have been fortunate. Among the great associations of Europe, the *Institut de France*, by right of age and tradition, perhaps, holds the highest rank. Originally founded by Cardinal Richelieu in 1635, it was re-modelled, after the Bourbon restoration, in 1816. It was then formed into four sections, to which King Louis Philippe added a fifth. It is still composed (we have heard of no radical changes in it since the fall of the Second Empire) of five sections, which take rank according to the order of their foundation. First, the Académie Française; second, the Académie des Inscriptions et Belles-lettres; third, the Académie des Sciences; fourth, the Académie des Beaux Arts; fifth, the Académie des Sciences morales et politiques. Each section is independent of the other; but the offices, secretariat, library, and all the *Institut* collections are common to the five. Each holds a meeting weekly, one on Thursday, another on Friday, and so on; each holds one public meeting annually; all the five hold a general public meeting once a year; and the *Institut* is presided over successively, and for one year, by each section. Thus, in 1868, the president of the Académie des Inscriptions et Belles-lettres presided over the *Institut*; in 1869, the president of the Académie des Sciences; and so on. The section of the Fine Arts contains forty members, of whom fourteen represent painting, eight sculpture, eight architecture, four engraving, and six musical composition. To be one of the eight is undoubtedly the highest honour that a French architect can receive; and M. Duc obtained this mark of eminence in 1866, when, among the candidates for the Academic chair were the late MM. Henri Labrouste and Vaudoyer. Therefore, the compliment about to be offered to a member of the French Institute by the Corporation of British Architects,—a compliment which the Queen franks,—is a professional recognition by his foreign brethren of one already weighted with honours; and it confers an obligation equally upon those who give and him who accepts. The first of these Royal medals was presented to the late Mr. Cockerell, in 1848; and the year after, the second was given to an Italian of some eminence. Since then the medal has been taken every third year by a foreigner; and the Frenchmen who have received it are MM. Hittorf and Texier (both deceased), MM. Le-Sueur and Viollet-le-Duc.*

Now what has M. Duc done to be thus preferred to such of his fellows as MM. Lefuel, Questel, Bailly, and others? Lord Bacon says:—"If a man perform that which hath not been attempted before, or attempted and given over; or hath been achieved but not with so good circumstance; he shall purchase more honour than by effecting a matter of greater difficulty or virtue wherein he is but a follower." In this fashion has M. Duc "purchased" honour. A description of some of the events connected with his career must certainly interest Englishmen. It may be possible thereby to convey a slight idea of the care and labour expended by the various hierarchies or sets of professional men, deputed for the purpose, in thinking out the construction of new public buildings, repairing old ones, and watching over those just erected in the city of Paris.

The first Napoleon, although necessarily a greater master of the arts of war than of peace, knew more of the latter than many of his friends and enemies are willing to admit; but it is a subject of congratulation that his scheme of a fountain, the principal feature of which was to be a bronze elephant, was never carried out. An architect named Alavoine was commissioned to design such a fountain to be placed on the site of the Bastille; and, in 1814, Napoleon decreed that the bronze should be supplied from the Imperial arsenals, and consist of cannon captured at the battle of Friedland. But the Fontaine de l'Eléphant was not to be. Although it had been decided so early as the 27th of June, 1792,—"in the year IV. of Liberty,"—it was only in 1833, and with the assistance of M. Thiers, that the long-expected monument to commemorate the destruction of the Bastille was seriously begun; and the architect of the projected fountain was chosen, after a lapse of twenty years, to erect the column of July. The works were hardly commenced when they were interrupted by the death of M. Alavoine, under whom M. Duc was acting as clerk of the works. The latter was therefore ordered not so much to continue as to begin the works. Ten years after the revolution of July, and nearly fifty years after the taking of the Bastille, the well-known monument as it now stands was inaugurated on the 28th of July, 1840, when the king made its architect a knight of the Legion d'Honneur. Soon afterwards M. Duc, who as a student had distinguished himself by an ingenious restoration of the Coliseum, was appointed to direct the alterations and extension of the Palais de Justice. The clerk of the works then employed at that building, M. Dommey, was ordered—as *architecte-adjoint*—to assist him; MM. Lenoir and Lassus were made clerks of the works, and of these four gentlemen only one remains alive at the present day—M. Duc.

The design of the column in the Place de la Bastille was almost completely altered at the death of M. Alavoine. Instead of a Doric it became a species of Corinthian column. Less Greek, and more natural in construction and expression, neither the Gallic cock nor the symbolic lion of revolution was forgotten. Civic arms and inscriptions identified it with the time, and the names of the dead to whom the column was dedicated proclaimed its purpose. The worst thing that can be said about it is, that it appears small, and is really big in proportion to other works of the same description. But this is hardly M. Duc's fault, for he was compelled to build upon the *soubassement* originally pro-

* The mistakes which are constantly arising in England between the name of Duc, architect to the Palais de Justice, and that of the celebrated author and archæologist, must be our excuse for adding that the latter gentleman's name in full is Eugène Emmanuel Viollet-le-Duc. That his claim to a chair at the French Institute is as great as that of M. Duc cannot possibly be questioned; and that he has never attained a similar position is probably due to a suspicion that the persistent opposition he has ever evinced to academic influence would lead to his refusal of the honour were it offered to him.

posed for the fountain—upon two basins, each 13 ft. high. Perhaps the strongest thing in its favour is that the smaller details of the monument are designed with scrupulous subservience to the nature of the material in which they are executed. A striking example of this is to be seen in the iron railing with which it is enclosed. One critic, however, whose opinion deserves respect—M. César Daly—has urged that the shaft of the column, composed of sheets of bronze, resembles a mass of dark stone or marble reposing upon a solid base; that, in fact, no attempt is made to hint at the system of construction concealed within. Undoubtedly this is a severe condemnation, for both shaft and base—solid in appearance—are hollow. But the criticism was more in advance of the time than even the column, which was a great stride to freedom in the use of Greek details. Our own critic, Mr. James Fergusson, with the remarkable faculty of analysis at his command, has summarised the superiority of M. Duc's column over others of the same kind. Declaring that the French have surpassed other European nations in "that Celtic form of art which expresses itself in the erection of trophies," he thinks that "of modern columnar monuments this is the most successful." As he justly adds, the column of the grand army at Boulogne seems to have "settled upon a plain with which it has no apparent connexion"; while that in the Place Vendôme is an exact copy of an ancient monument, with the exception that the Roman soldiers, instead of wearing helmets, shields, and breastplates, are burlesqued into the coats, cocked hats, and boots of modern costume,—absurdities which have been avoided in the column that graces the site of the Bastille.

But the great work of the day—a surprise to the mature, and a lesson to the young student—is the new Salle des Pas Perdus and the buildings connected with it at the Palais de Justice. Yet neither within nor without is this hall a model of beauty; although refined in all its details, it is perhaps inelegant in general outline. There are modern works, even in England, more captivating in effect, and in which the superficial elements of beauty are more strongly marked; but since the revival of letters, none have been erected which give, with greater decision, truthful expression to the thought and aim of the constructor, than this one. Neither original nor fantastic, it attracts neither by eccentricity of construction or details, nor by bits of ornament or masses of sculpture. How simply the means to an end have been used at times convince, without astonishing, the matter-of-fact inquirer. The new Salle des Pas Perdus is Greek in its closed portico, Roman in its arcades, Mediæval in its vaulting, French in its general effect. It is symmetrical, without any forced regularity; utilitarian, and not crude; classical, yet devoid of pedantry. It proves not so much the genius of the architect, as the pliability of "orders," "rules," and other antique *impedimenta*. The force of reason and common sense is there displayed in the manipulation of hard and cold materials, and its completion establishes a fact—promoted without a doubt by prolonged archæological researches in both Greek and Gothic fields of art—that all the constructional forms of every country may be so adapted to the style and habits of the present time as to produce a harmonious result, provided always that the cognate principles of ancient and Mediæval architecture be scrupulously followed and developed. The day has gone by, happily, when any professor dare intimate that the study of one form of pure art can militate against practice in another; and Englishmen who have designed the most successful adaptations of native architecture have owned, perhaps a little late, that from the Athenian Propylæa they first acquired a thorough appreciation of the principle and beauty of Mediæval construction. M. Duc, *vice versâ*, has leavened a profound knowledge of the ancient Greek with an admixture of Gothic method, and thereby produced a scientific, truthful, and artistic building. "For three centuries," said Mr. Fergusson to the Royal Engineers in 1862, "we have been labouring under the delusion that it was neither science that advanced the art, nor truth that rendered its production pleasing, but some strange notion that it would be beautiful if it could only be made to look like something it was not,"—keen, uncompromising, bitter criticism, which at this very hour applies to the general mass of modern buildings both public and private. That a great new work should appear in all its parts to be what it is, is therefore no small merit. But M. Duc has done more: he has instilled life into dead styles of architecture, and it remains for a succeeding generation, working on similar principles, to shape the innovation into beauty.

M. Jules Boucher, writing, in 1868, in the *Revue*, conducted by M. César Daly, said:—"L'œuvre de MM. Duc et Dommey doit son succès à la fusion savante que ces artistes ont su opérer entre le goût élevé de l'antiquité et le positivisme inséparable du progrès de notre temps." The same critic concluded his long notice with a characteristic anecdote:—"Cette phrase innocente que nous avons entendu débiter dans la cour même du Palais de Justice. . . . . 'Oui, mais qu'y a-t-il là de bien nouveau?' Du nouveau! mais est-ce qu'un beau sein de femme, le torse d'un beau garçon, un bel arbre, sont choses nouvelles? Et ces objets en sont-ils moins précieux pour être connus de temps immémorial?" Nor are M. Duc's brethren of another and partly antagonistic school of thought backward in rendering justice to his skill and learning. After commenting upon the sceptical indifference excusably evinced by people in general to the ordinary buildings of modern cities, M. Viollet-le-Duc declares that too much praise can never be given nor public attention too often directed to the work of a true artist. He then in a footnote in the second volume of his "Entretiens" cites the new portions of the Palais de Justice, in which "la décoration tient à la structure, l'appuie même et ne manque par cela ni de grandeur ni d'originalité. La Salle des Pas Perdus, extérieurement et intérieurement, est un de ces monuments qui fera honneur à notre temps. Là tout se tient; tout est lié par une pensée claire. L'exécution comme il arrive toujours répond à la composition. Elle est belle et pure. On sent l'artiste, chose rare dans notre temps, qui respecte son art et le public." These words convey no idle or interested compliment, for M. Viollet-le-Duc has never scrupled to express publicly a hostile opinion,—and generally a correct one, if identity with that of Mr. Fergusson may be taken as evidence,—of the works of men like the late MM. Hittorf, Duban, Labrouste, and others.

When first appointed, thirty-six years ago, to the Palais de Justice, the architects proposed, in conjunction with the then youthful Committee of Historical Monuments, to preserve the Renaissance remains in the courtyard of the old Préfecture de Police,—in fact, to make use of what was left of the old in the new work then contemplated. Part of the walls of an old Salle des Pas Perdus, of the time of Louis IX., had also been discovered; but it was found impossible to use or even restore them, without pulling down a large and important modern building. The first design for the suggested additions had been made by M. Huyot, under the administration of the Comte de Rabuteau, in 1836; but this was modified in plan, and almost entirely altered in elevation, by M. Duc, under whose direction the works, once begun, were continued without interruption until the fatal year 1870. A portion of the façade, on the Quay de l'Horloge, has been reconstructed in the style presumably of the fourteenth century; but this and restorations of a similar description are the least successful efforts of eminent Paris architects, and it is not surprising that M. Duc should have failed to impart Mediæval feeling to this portion of his work, however correct his construction may be in principle and even in details. A small villa, lately built at Croissy (Seine-et-Oise), for his own accommodation, shows him, however, both willing and able to descend to trifles of domestic architecture. M. Duc contributed a design for the Tomb of Napoleon, and in 1861 received the fourth premium in the great competition for the New Opera-house, the fifth and last premium having been obtained by M. Garnier, who, as is well known, ultimately erected the building. Before taking his seat at the *Institut*, M. Duc had been raised to the grade of officer of the Légion d'Honneur; and on August 15th, 1869, he received the Grand Prix of 100,000 francs, which the Emperor had decreed five years before should be awarded every five years to some artist who had specially distinguished himself in painting, sculpture, or architecture. M. Duc was consequently the first, and perhaps (yet who shall say?) the last, recipient of a magnificent and unsatisfactory prize.

The particulars of that event are interesting and instructive, for they show the appreciation the French have of architecture, and the place they give it in their world of art. Before the election, Parisian opinion on the subject was but slightly divided; and it was felt that of all men two most deserved the distinction,—M. Viollet-le-Duc and M. Duc, and of the two there was no difficulty in making a reasonable choice. The French apply to architectural works an expression which we also possess, but do not make use of for the same purpose: it is *créer*. It was felt that while M. Viollet-le-Duc had taught Frenchmen and the world how to "create" many buildings, M. Duc had actually "created" one,—a fact which certainly influenced the verdict of the special jury. This body held twenty-five sittings. Nine candidates were at length chosen: three for painting, three for sculpture, and three for architecture. The names of those in the last section were Duc (Palais de Justice), Garnier (Opéra), and Lefuel (Tuileries). At the election, twenty-nine of the jury were present. At the first division (Academicians vote *oui* or *non*, not by a show of hands), nineteen voices declared in favour of the three architects, and three other voices for a sculptor, seven members abstaining. At the thirteenth and last division, the numbers were fifteen for Duc, two for Lefuel, one for Garnier, and one for Perraud; ten of the jury having declined to vote. What followed was inevitable; for Parisian vivacity could hardly fail to draw an incongruous parallel between the winnings of Gladiateur and those of M. Duc. The Emperor nominated MM. Lefuel and Viollet-le-Duc *commandeurs* of the Légion d'Honneur. At once the cry of inconsistency was raised: these men had been promoted to a higher grade than Duc, who was "simple *officier* with 100,000 francs premium!"* The French have probably too much wit to possess much sentiment, and what little they have preserved of the latter is often eminently false. Every one remembers the famous Imperial communication about the New Opera-house and the New Hospital; how the completion of the building dedicated to profane deities ought to follow, not precede, that of the Hôtel dedicated to God! At the same time the "Cent Mille" of Longchamps was presumed to weigh more heavily upon the artistic conscience than the purse of the people, so a "Cent Mille" was consecrated to art as well as the horse!

M. Duc did not appropriate the whole sum of 4,000*l.* to himself. A few days after his victory he communicated to the Académie des Beaux Arts his intention to found an architectural prize (and one of some value) to be open to all Frenchmen, and to be awarded every two years. His letter, which was well and simply worded, loses in translation. He said:—"In every age architecture has been the great handwriting of history, and that of our country has faithfully expressed our civilisation and manners from the Roman domination to the time of Louis XVI. Since that period the signs and shapes which constitute the elements of our handwriting have been disturbed in their successive transformation by causes which are unconnected with the changes of society. The face of art has become *critique* instead of *organique*. . . . . Admitting the fact, against which our institutions are powerless, it has seemed useful to the founder to determine . . . . . the style and shape of the *éléments* of our modern architecture. The aim of this competition is therefore not to repeat those brilliant and ingenious compositions which are daily produced at the École des Beaux Arts. . . . . The competitors will have merely to present, as they may choose, the most simple subjects, and above all the fittest subjects to place in evidence the main principles of our architecture." We attach importance to the phraseology and point of this letter because the writer is not a latter-day enthusiast, harping on the cry of "true principles," but a Classical architect, who, in his youth, passed the usual curriculum of study as it is prescribed by our more academic neighbours, and who is undoubtedly imbued with excusable horror of the abortions which, both in France and England, are now tolerated under the plea of honest expression and native origin. To M. Duc more than to the architect of the Bibliothèque de St. Geneviève is owing the actual cultivation in Paris of the Neo-Greek school of architecture,—a school destined to produce in due time an eclectic European style of art with a firmer basis and broader aspirations than it would be wise, even if it were possible, to suggest.

Any one who is acquainted with the administration of public works in France, or, indeed, who is compelled to seek in French periodicals the dry facts connected with it, must remark the almost complicated position in which architects

* M. Duc has been since promoted to the grade of "commandeur."

in Paris are placed with regard to each other. We find young M. Duc clerk of the works under Alavoine; the late M. Espérandieu clerk of the works under the late M. Vaudoyer at the new cathedral of Marseilles, and that at a time when the former was erecting in the same city one of the finest modern buildings in France. During the greater part of the Second Empire the city of Paris was divided into eight *circonscriptions*, for the preservation and maintenance of public buildings. At the head of each was a professional architect. Thus, in 1869, the Colonne de Juillet, which remained under the charge of its architect, M. Duc, was in the seventh *circonscription*, of which M. Lefuel was Inspector-general; while the Cour de Cassation of M. Duc and the École des Beaux Arts of the late M. Duban were both in the third *circonscription*, of which M. Questel was Inspector-general. At that same period the *Service des Travaux d'Architecture* was divided into four sections: first, the barracks, prisons, &c., under the late M. Gilbert; second, the colleges, schools, &c., under M. Duc; third, the municipal buildings, &c., under M. Bailly; fourth, the churches, under M. Ballu. But after 1870, when M. Léon Say was *préfet* of the Seine, this *service* was reorganised; and a council was then formed for the purpose of assisting the minister in building-schemes, designs, estimates, &c., in the choice of officers, and other questions concerning the direction of public works. This was confirmed by a decree, dated the 31st of June, 1871, the perusal of which would possibly astonish Lord Henry Lennox or Mr. Mitford, were either of these gentlemen disposed to learn how so ungovernable a people as the French manage architectural matters. The decree contains several articles, the first of which establishes "a permanent service of architecture," composed of three inspectors-general, twenty architects (of each *arrondissement*), one architect of the buildings occupied by the administration, twenty-one clerks of the works, twenty-one surveyors, and twenty-three clerks, sub-surveyors, &c. The second article prescribes the duties of the three inspectors-general. They are to give opinions upon designs and estimates, look after works in course of execution, as well as the *comptabilité* of the architects intrusted with such works, more particularly as regards the choice of materials, difference between estimate and outlay, alterations made during the progress of the works, &c. They are also expected, firstly, to prepare the programme of designs for new buildings, and if required, preliminary sketches for such works; and secondly, to inspect the works of art in the division to which each is attached. The first inspector-general has charge of the religious edifices, the Sorbonne, Lycées, schools, &c.; the second, the Hôtel de Ville, the Bourse, the Tribunal de Commerce, cemeteries, theatres, municipal buildings, museums, &c.; the third, the barracks, the Palais de Justice, police-offices, prisons, markets, granaries, custom-houses, &c. In 1871 the President of the Council was M. Alphand, and the Vice-president M. Duc. The three Inspectors-general were MM. Bailly, Davioud, and Magne, and M. E. Trélat was appointed chief architect of the department of the Seine. Architects were authorised to assist in the labours of the council, and to vote in matters relating to their own service.* It will thus be seen that, although French Governments of every colour tend in the long-run to despotic rule, the city of Paris, as far as the public works go, is sufficiently representative in its institutions. At least it is some satisfaction to know that the last French Republic is quite as favourably disposed to the profession of architects as the ruler who preceded it; and who was once sarcastically styled their Emperor.

This incomplete reference to M. Duc and some of his colleagues would be still more imperfect were we to omit one thing which savours of old rather than new France. M. Duc possesses the charm of manner and address to which our grandfathers were accustomed—a charm which equally pertains to his half namesake, M. Viollet-le-Duc. Those who have conversed with both of these gentlemen will bear out our assertion; and indeed the latter was but lately the worthy subject of more than one complimentary notice in the *Times* and other English journals. It is pleasant to be reminded of this fact, and particularly so when the *Quartier Latin* continues to foster that modern hybrid, of revolutionary tendencies, the artistic rough. M. Duc acquired the knowledge of his art in the same social school as the late Mr. Cockerell; and each is an example to the students of either nation. Nevertheless, in spite of things moral and things social, all classes of Frenchmen are ahead of their English neighbours in innate artistic appreciation by at least a hundred years. Their academies are older by that period of time than those established in this country; and intuitive respect for the arts comes by inheritance. If Paris is now the most beautiful of modern cities, the fact is due not to the labour of a score, but many scores of years. It is due as much to the taste of the people in general as to the education of architects in particular.*

* We refer our readers to page 94 of the Paris Post-office Directory for 1876 (in the library of the Institute of British Architects), in which the whole administration of French public works is catalogued. The original decree of M. Léon Say has been since slightly modified. At the present moment the artistic inspection of Paris is divided between MM. Ballu and Davioud, Inspectors-general. MM. Duc, Bailly, and Magne remain as honorary officers.

THE PINWELL EXHIBITION IN BOND-STREET.

CLOSE following on the late remarkable exhibition of the works of Frederick Walker, comes the collection, in the same room, of those of G. J. Pinwell. The system of putting together, for comparison and collective criticism, the productions of a deceased artist, seems to be becoming an accepted idea, and it is certainly, as well as an act of homage to the artist, a crucial test of his power. It is a very severe ordeal for any but the highest genius to be submitted to,—that of placing all a man's works in such close proximity that mannerism and repetition in style and idea are at once evident, if existing, and what appeared when taken by itself to be a very original and unique fancy may be found to be only one of a number with a strong family likeness. In such a collection the "critic" gets into the weak points of the painter's armour, if he ever does at all; and it is a great tribute to the genius of an artist to be able to say that you come out from such a collection of his works with a higher idea of his power than before. This, as we indicated at the time, was emphatically the case with the Walker exhibition; it can hardly be affirmed that it is equally so with the present exhibition of the productions of Pinwell.

No doubt the collection of Walker's paintings did show, as we noticed, a certain "manner" in dealing with the pose and expression of figures; but this was only what every one who had noticed his pictures since his name became famous was aware of. On the other hand, many who only knew him, or knew him chiefly, by his Academy pictures of late years, must have been surprised to find how various was his ability, how many things he had tried in his short artistic career, and how successful he had been in all of them. We can hardly say that the present exhibition produces a similar impression. That Pinwell had a manner, or a mannerism, every visitor to the old Society of Water Colours knew; and an examination of this collection of his works only seems to show that he had little grasp beyond the limits of his particular manner. What is in favour of his reputation is what we knew before, his high finish, feeling, and originality of style in certain works with which we were familiar; what we gather for the first time from the opportunities of comparison here afforded, is rather calculated to raise the question whether he had any claim, artistically, to such a special commemoration, and whether it does not offer rather an unfortunate exaggeration of his peculiarities and shortcomings.

The strong points of the collection are the works which have from time to time occupied places of honour on the walls of the Water-colour Society's Rooms, and of which, perhaps, the finest and most typical is the "Elixir of Love" (70). This shows, equally with any other of the artist's works, either before or since, the rich and harmonious tone, and the high finish, far beyond what is generally attempted in water-colour, with which the features are painted,—we may say "painted" without an apology, for they are executed in a medium and manner far more analogous to oil-painting than to what is usually understood as watercolour. And this work surpasses almost any of the others in combined point and variety in the action of the numerous figures composing the group. The idea of the picture is a good one; it appeals, in a sense, to universal interests, and the various action of the groups composing it is reduced to unity by the single interest which binds them together. This is attempted, but less successfully, in "Gilbert à Beckett's Troth" (80), where the group are all occupied, either in pity or scorn, with the foreign woman wandering in search of her sweetheart; but somehow the picture does not tell its story well—it is hardly a telling subject for pictorial treatment, and there is something scattered and unsatisfactory about it; one wonders what it all means, and why the young man and woman on the left assume such constrained and awkward attitudes. The face of the centre figure in the "Elixir," the girl who holds up the phial in loving contemplation, while her companion clings to her with the same kind of expression in countenance and pose, is very beautiful, and extraordinarily finished. But if we turn to "The Great Lady," also in itself a very admirable work (44), we find the same woman, the same identical face, and the same finish; and the figure and gait which represent very well the young sentimental girl, hardly represent equally the style of personage evidently intended in the title of this picture. That is an instance of what we mean by questioning the advisability of such an exhibition as this of Pinwell's works, unless as a means of estimating more accurately his exact position among artists. Each of these two pictures has deserved and received high admiration separately; each of them loses by juxtaposition, because they show a mere repetition of the same type in illustrating subjects utterly different.

The three works above referred to belong to the phase of Pinwell's career by which he will be best remembered, since it is in these works, and such as these, that he established a line of his own. It must be said, however, that there is a vagueness and unreality, a confusion as to time and place, which, however suitable to such subjects as the "Elixir" and "Gilbert à Beckett," seems out of place when it overshadows alike his treatment of other more everyday scenes. "The Country Walk" (57) is a production of the same time, and though the lady's face in it is very sweet in expression, and the landscape very picturesque in general forms, there is such a vagueness about the tones and the local colour, such an utter absence of "out-of-door" feeling, that it is like a country walk in dreamland. Previously to this, Pinwell had produced works, mostly small, which depended less upon finish and more upon human feeling and character for their effect. "A Seat in St. James's Park," for instance, has a more genuine pathos, in the figure of the worn anxious man (evidently one of those to whom modern Babylon is too cruel) seated in sad abstraction next to the nurserymaid and her military admirer. The tone of the uniform of the latter is not fortunate, and his leg, or rather shank, would seem more in place in the pages of *Punch*, who delights to represent these ornaments of our parks with the longest and thinnest of spindle-legs. But the other figure interests us more than most things in the room. Among the smaller works, again, the figure of the vagrant apostrophising the dog, illustrating a quotation from Dickens's "Uncommercial Traveller" (54), has real humour and vivacity of expression, of a kind which the artist seems very much to have lost in his subsequent more ambitious subjects. This was one of the earlier Dudley Gallery works; and one may compare it, in reference to the opinion just expressed, with the large sketch of "Sally in our Alley," in which there is a good deal of vivacity in the secondary figures; but who could accept the stiff, strutting young man escorting Sally as the hero of that most artless and natural of ballads? Other figures in the later pictures seem to us very inconsequential; the "Pied Piper," the first edition of him, at least, with the rat procession, is a very good bit of grotesque humour; but what in the world have the couple on the right got to do with it, and why do they stand in such affected attitudes? The second "Pied Piper," with the procession of children, we confess to regarding as an entire failure; it is neither weird nor life-like, the children are not half excited enough, nor the parents anxious enough for the occasion; they look as if they were only playing at the ballad in a nursery. More recently the artist seemed rather drawn to a more real and life-like style again; among instances of this is the very nice and characteristic old couple represented in the interior scene called "The Old Clock" (63), which we remember calling attention to in our

* It is absolutely necessary to add, in face of the contradictory statements even now published in this country, that the new Salle des Pas Perdus, the staircases and principal corridors executed by M. Duc at the Palais de Justice, were *not* destroyed during the fires of May, 1871. In fact, the work of completing the approaches to M. Duc's magnificent Salle was being actively proceeded with at the close of last year.

notice of last year's Exhibition of the Water Colour Society; and his visit to Tangier produced a work in a rather different manner from anything he had previously done,—"The Prison-hole, Tangier" (104),—and very admirable in its way. Among the more ideal subjects, the woman's figure in the "Earl o' Quarter-deck" (50), though rough in finish in comparison with his best-known works, and though the whole tone and manner of the picture is very *outré*, nevertheless has to our thinking more intensity and pathos than most other things in the room.

We looked with interest to the sketches and studies, but must confess to disappointment. The book illustration drawings seem to us very deficient in interest, and a large number of the studies exhibited are so rough as really scarcely to deserve the name. It is difficult to see what pretext, except a desire to fill the wall, there could be for hanging such a sketch as the "Knight Returning from War" (92), which gives the idea not so much of studying a picture as of trying for one out of accidental vagaries of the brush, much as the ancient painter got the foam on the dog's mouth by throwing the sponge at the canvas. There are many others equally rough, scarcely even suggestions. Nor can we see what good could be done to the artist's memory by hanging so unfortunate a production as "Sweet Melancholy," the title of which really seems meant for a joke. In short, we leave the exhibition with doubtful feelings as to the wisdom of having made it. The writer of the preface classes Pinwell, by implication, in his first sentence, among "our *great* painters." It is unfortunate that a claim should have been made for him for a position in the art which this very exhibition goes far to negative, though it contains works of unquestionable interest and beauty.

ROMAN REMAINS IN ALGERIA.

Algeria is a colony about which comparatively little is known beyond the history of the French campaign. If anybody doubts the assertion let him select some prominent event in its history and try to find out some trustworthy information on the subject. A Londoner would inevitably have recourse to the British Museum, only to discover the barrenness of the library and the general ignorance of its usually well-informed custodians on the topic. They can refer to a few books of modern travel, generally written by valetudinarians, and more or less valueless; and that is all. If he crosses the Channel, he will find that the majority of well-informed Frenchmen only remember the war, and the famine, and the bold bishop who bearded Napoleon in the zenith of his power; and that, even at the private *librairie*, where Algerian works are a speciality, there are bushels of chaff for every grain of good matter. The truth is, France has come to regard her colony as an *incubus*, and cares very little about it; and, if the owner is thus indifferent, it can scarcely be expected that strangers will, as a rule, display much greater interest in this corner of the great African Continent. Yet Algeria has had a most memorable past, and every scrap of information respecting its condition in those days when the warriors of Carthage and Rome contested its possession ought to be warmly welcomed by the archæologist. The most recent contributions to our knowledge of the interior has just been made by Lieut. Colonel Playfair, H.M.'s Consul-General, who visited it about six or seven months ago. His first discovery was made at a place called Guelma, where he found an interesting Roman tombstone,—that of a young man who too confidently hoped that his wife would have rested beside him. The work, he says, is rude in point of art, but extremely beautiful in conception. It is a monolith of rose-coloured marble, square in plan, consisting of a pedestal, with cornice, plinth, and base, supporting a crowning part rising on the same plan, terminating in an architectural feature which has now disappeared. On the principal façade, the top piece bears a circular wreath inclosing two portrait busts in relief, that of the man only being completed. The features of the woman are not chiselled. The plinth has a garland suspended from the cornice, below which the surface is divided vertically for two inscriptions, that of the man alone being filled up. On the left side of the plinth is a folding-door just shutting, and intended to represent the door of that terrestrial home which had then closed for ever. On the same side is another one, opening,—representing the life to come. This interpretation is confirmed by the sculpture on the opposite side, which bears on the plinth the figure of a winged child with reversed flambeau, while above it is a cock crowing to represent the dawning day.

Passing onward, Colonel Playfair everywhere found Roman remains of villas and castles, until he reached Mahajiba, the *Seniore* of the Itinerary of Antoninus. Looking at it with a soldier's eye, he says this stronghold was admirably chosen from a strategic point of view. The whole hill is still covered with the remains of buildings constructed of huge blocks of cut stone, some of the walls being entire to above the level of the first-floor, with the holes for the reception of the joists distinctly visible. The principal ruin is a tower which may have been the citadel of the place. It consists of a rectangular inner keep, about 30 ft. by 18 ft., and 40 ft. high, and is complete as far as the cornice. It was divided in the ground-plan into two portions, communicating with a door, which was about half the whole interior width; there were probably also two or more stories. This was surrounded on three sides by an outer wall, 4 ft. thick, forming a spacious enclosure, the whole being a part of the general system of defence. The fourth side of the tower towards the body of the place was not thus surrounded; but a simple prolongation of its face completed the *enceinte*. The walls of the tower are pierced with narrow apertures, like modern loop-holes for musketry, while the outer wall has larger ones resembling embrasures for artillery. Every building on the place seems to have been built with a view to defence; all have the same loop-holes, and many of them have what appears to have been a species of portcullis. This was formed of two immense upright blocks of stone, having an exterior and interior groove. In the former, large flat slabs of stone were dovetailed in; and it is probable that some of these were habitually left out, and only put into position during an actual siege. In times of peace, wooden bars, one above another let into the inner grooves, probably formed a more temporary barrier. In the tower or citadel above mentioned, two different styles of masonry are distinctly perceptible, and support the idea that like many other Roman strongholds, *Seniore* was overthrown by the Vandals, and was re-conquered by Belisarius or his successor. The stones are uniform throughout, but the upper courses are much more loosely joined together than the lower tiers. No inscriptions of importance were found in the place.

About 15 kilos. from Constantine there is a remarkable building, which has either served as a mausoleum for some distinguished person, or as a monument commemorative of a great victory. This edifice is composed of three principal parts—a square base of nearly 3 mètres high, surmounted by 3 gradients each 50 centimètres in height, and above these gradients rises a plinth of 1 mètre 10 centimètres, crowned by a splendid cornice of a bold and firm yet refined character, measuring 65 centimètres in height. At this level a course of stones, 50 centimètres high, retired from the cornice by 30 centimètres on all sides, extends like a pavement over the upper surface of the monument, and serves as a footing to four square pillars that occupy each angle, leaving a distance outside of nearly 1 mètre on each of the exterior faces. Prominent round bucklers decorate the outward faces of each of these pillars. From this point the structure has been thrown down, partly by earthquakes and partly by human agency; and the materials lie scattered in every direction. Our explorer saw capitals of the Doric order, frustra of columns without fluting of any description, soffits decorated with geometric forms, small entablatures, evidently belonging to the interior of the ruined part of the building, and fragments of the superior cornice. He says no doubt exists that the square pillars supported columns covered with a pediment, and leaving between them an open vista to expose to view and protect some notable object, such as a statue or sarcophagus. The whole building is formed of beautiful cut stone, joined with great perfection, not a trace of mortar being perceptible. The ground around this monument has risen in the course of ages nearly to the level of the base; but, in 1861, the south and part of the east side were cleared of *débris*, and a vain attempt was made to penetrate to the interior. The problem of its origin still remains unsolved; but a careful search among the accumulated ruins on the north side would doubtless be rewarded.

Throughout the whole of his tour, Colonel Playfair found abundant traces of the Roman occupation; but they exist nowhere in greater perfection, or numbers, than in and around the Aurès, a mountain region hitherto quite unknown to European travellers, and roughly corresponding with the *Mons Aurasius* of Procopius and other geographers. The whole area of this district is about 800 square kilos., and it is occupied by a race of Berber shepherds, who seem to have viewed their conquerors with kindliness, to have intermarried among them, and to have become assimilated to them. The features, language, and customs of these people bear unmistakable testimony to their classic origin; light hair and blue eyes are very frequently seen, and Colonel Playfair even ventures to assert that in no country is the average of female beauty so high. Their language is full of Latin words, and in their daily life they retain customs undoubtedly derived from their Christian ancestry. They observe the 25th of December as a feast, under the title of *Moolid* (birth); and use the solar instead of the lunar year. Some of the mountains attain an altitude of nearly 8,000 ft., and the villages are perched high up on the face of the hills, not unlike the castles along the banks of the Rhine. All over the district, wherever there is a valley of exceptional richness, or a little plain, there one is sure to find the remains of a Roman establishment, consisting of foundations of edifices, built with large and well-cut stones, frustra of columns, oil-mills, &c.; but the finest and largest towns are naturally on the outskirts of the neighbouring level country, and, as it were, surround the Aurès with a zone of architecture. Some of these ancient cities have been previously explored and described; but until now the old town of Thamugas has been unnoticed. This ancient city, which was situated in a rich plain on the northern slope of the Aurès, was founded to celebrate the victories of Trajan over the Parthians, and to recompense the veterans of the 30th Legion, Ulpia Victrix, for their participation in the struggle. This fact is proved by an inscription which still exists in duplicate on two magnificent pedestals of white marble, of octagonal form. Its bishops are mentioned as having assisted at several of the councils of Carthage. The principal ruins are on the north side of the town. The most remarkable of them are the fortress, the theatre, the forum, a triumphal arch, and a large temple. The stronghold measures 110 mètres by 90 mètres, flanked on each side by three salient towers. The theatre, which was formed on the slope of the hill, was built of costly materials, and was evidently intended for the accommodation of a considerable population. The forum consists of a long colonnade, running parallel to an extensive and beautiful valley. The back part was formed of a continuous wall, against which were constructed ranges of small buildings, which were probably shops, separated here and there by openings giving access to the body of the forum. Towards the southern extremity of the colonnade, which was of great length, another range of columns ran at right angles to it, and probably formed a second side to the forum. Great numbers of inscriptions are scattered about. These, no doubt, decorated this public resort, or commemorated distinguished citizens or important events. The most prominent monument, however, and one of the chief Roman relics in Algeria, is the triumphal arch. It consists of three openings, the side arches having above them square niches for statues. The monument is of the Corinthian order. Each side is decorated by four fluted columns, that occupy the angles and the spaces between the arches. To each column corresponds a pilaster, both being supported by a common pedestal. A powerful entablature connects all the columns and pilasters together, and was itself surmounted by an attic, with an entablature, of which a portion of the architrave alone remains. Over the two lateral arches and the square niches, and supported by two columns, are two curved pediments, such as surmount some of the niches in the interior of the Pantheon at Rome. None of the original inscription remains in place, but fragments of it have been found below and near the forum which enable it to be thus restored:—

Imp[erator] Cæsar [divi] Nervæ f[ilius] Nerva Trajan[us] [Au]g[ustus] Germanicus Pon[tifex] Max. Imperator III. tr[i]b[unicia] Po[testate] IIII., Consul III., P[ater patriæ] co[loniam] Marci[anam] Tr[aj]anam T[hamuga]di per leg[ionem] tertiam [Augustam] f[ecit] . . . . anatim[ius ?] Gallus leg[atus] Aug[usti] pro prætore d[edicavit].

The two façades are identical in feature, and

each is in itself perfectly symmetrical, except that the capitals of the two columns on the southern façade, instead of having the angle of the abacus supported by volutes, have eagles in their place. The square niches have each their separate entablature and columns supported by sculptured brackets. The mass of the monument is of sandstone, but the columns, capitals, and bases of the pilasters, brackets, and entablatures, are entirely of white marble, as was also the crowning of the attic. The last building noted is a temple, which was probably dedicated to Jupiter, and which must have been a very splendid edifice. A large porch probably existed before the entrance, as the vestiges of a colonnade are still visible, parallel to the principal façade. This was most powerfully constructed; a transverse wall which may have corresponded to the entrance to the cella measures nearly two mètres in thickness, the stones varying from 1 to 1½ mètre in length, and from 0·65c. to a mètre in breadth, and 0·50c. in height. An attic base in blue limestone, lying on the spot, measures 1·97c. at its plinth.

In the course of his wanderings Colonel Playfair also investigated the great cave of Djebel Thaya, which, as far as is known, had never previously been visited by an English traveller. This is a great natural cavern which appears to have been converted by the natives into a temple to the god Bacax—a deity who, from many existing inscriptions, would appear to have been adopted by their Roman conquerors. It is further gathered from these inscriptions that every year the magistrates of Aquæ Tibilitanæ came with much ceremony to offer a sacrifice to the god of the cavern. These records also contain the names of consuls who were elected under the Emperors Caracalla and Geta, A.D. 211, and from this date they are mentioned up to A.D. 268. Unfortunately we have no space to describe the cave, or rather the series of caverns; but we have said enough to show how interesting Colonel Playfair's journey was, and how well worthy this region is of the attention of English archæologists. Every courtesy and assistance is extended to visitors, and Algeria is within easy reach from Marseilles. Notwithstanding the extent of his experience and the voluminousness and carefulness of his notes, Colonel Playfair was not absent from his consulate for two months altogether.

CHARACTERISTICS OF GROUND PLANS ADOPTED BY THE GREATER CONVENTUAL ORDERS OF ENGLAND.

ARCHITECTURAL ASSOCIATION.

At the ordinary fortnightly meeting of this Association, held on Friday evening, the 18th inst., Mr. John S. Quilter, president, in the chair, votes of thanks were tendered to Mr. Waterhouse for his kindness in conducting the members over the new Natural History Museum at South Kensington, and to Messrs. Dollman & Allen for permitting the members to visit the new Church of All Saints, Aden-grove, Stoke Newington.

It was announced that the next visit of the Association will take place on Monday next, the 28th inst., to Messrs. Cubitt's works in the Gray's Inn-road, when the whole of the departments, including the iron foundry, will be shown in full work.

The following new members were elected, viz., Messrs. R. Henry, W. H. Fisher, G. W. Ferguson, J. Butters, R. Boughton, G. T. Shaw, G. Smith, J. M. Smith, R. Milnes, and C. Richardson. It was announced that at the adjourned special meeting to consider the question of branch societies, it was resolved "That no person present at any meeting shall have more than one vote." (This resolution was passed in order to prevent delegates of a branch society, who might happen to be members of the Association, from having a vote in each capacity of delegate and member.) It was then resolved that the Birmingham Architectural Association should be admitted as a branch of the Architectural Association, subject to the conditions stated in the draft rule which we have already published, and which has been adopted as one of the rules of the Association.

The Rev. Mackenzie E. C. Walcott, B.D., then read a paper "On the Characteristics of Ground Plans adopted by the Greater Conventual Orders of England." He commenced by asking, What is a conventual church? What is conventual arrangement? A conventual or regular foundation, was composed of inmates supported on a common fund, living, sleeping, and eating in common; and the plan was designed to combine a number of distinct buildings in a compact, simple, and convenient manner, with a harmonious grouping of the exterior. These might be (1) under the rule of St. Benedict, monks religious, Benedictine, Cistercian, Clugniac, or, under a modified form, Carthusian; (2) under the rule of St. Augustine, Regular canons (black), Austins (white), and Præmonstrants, and friars Dominican, Franciscan, Carmelite (black, grey, and white), or Augustinian. In cathedrals of the new foundation, some Benedictine, one of Austin canons, a bishop's throne made their cathedrality. In all other respects they were conventual. Again, there were secular cathedrals of the old foundation, in which every member of the Great Chapter, being resident, lived in his own private home, maintained his own household, and possessed a separate income or prebend, apart from his share in the common fund. Their vicars had chambers in a college, with their own chapel and common hall. In all main respects similar, except in the absence of a bishop's throne, were collegiate churches. Both had, or might have, a cloister. They always possessed a chapter-house,—invariably of polygonal shape,—and library, but they had no dormitory or refectory. At Lincoln the cloister was ingeniously contrived on the north side, and at St. Paul's was converted into corridors of two stories, with a chapter-house in the centre. The name of Minster was common to all the great churches. The arrangements of the choirs differed. At the four corners, in a secular choir, sat the four dignitaries,—the dean at the south-west, the precentor at the north-west, the chancellor at the south-east, and the treasurer at the north-east, the archdeacons ranking next to them. Between them, in the upper stalls, were canons priests, below them canons deacons and subdeacons, and vicars choral. But in a regular choir the abbot fronted the friar, the precentor sat in the midst of the northern stalls, facing the succentor on the south. Novices sat in the second range. The ground-plan of the great Norman churches, both regular and secular, was the same. The high altar at first stood isolated in the chord of the apse, with the bishop's chair behind it, and a luna on either side for the priests (whence our term "presbytery"). When this part of the building was enlarged, and the reredos introduced, the altar was attached to the eastern wall. With regard to the *nave*, the Benedictines usually erected a distinct parish church, for the accommodation of their dependents and tenants (Westminster, Malmesbury, Gloucester, Peterborough), but sometimes made it an annexed building, or an aisle (St. Alban's, Chester, Leominster, Sherborne). In other cases there was a division made between the monks and the parishioners, the townsfolk occupying the nave and the religious community retaining the eastern arm, which is the reason why, at the Dissolution, many choirs were destroyed and the naves spared (Croyland, Wymondham, Thorney). The *Galilee porch*, used as the last station in a procession, occurs at Ely and at (secular) Chichester, at the west end. There is a small one annexed to the transept at (secular) Lincoln. They somewhat resemble the ante-church of a Clugniac church. The *choir* was arranged under the central tower, or in the crossing, and when additional space was needed the stalls were then continued along one or more bays of the nave westward. The *rood-loft* was usually the choir-screen, but at Durham it stood under the western arch of the tower, and the choir-screen under the eastern arch. At St. Alban's there was a double screen at the west end of the choir, and a presbytery screen under the eastern arch of the tower. The *transept* had always apsidal chapels on its eastern side; these were afterwards often converted into aisles for altars, and on the south side elongated into a sacristy, as at Norwich. At Winchester there are cross aisles, with an upper stage for the exhibition of reliquaries, as at St. Stephen's, Caen. The *presbytery* (*i.e.*, before 1085) was often erected over a large subterranean church or undercroft (in imitation of the Memoriæ of the ancient basilicas), which contained numerous altars. Where there was a popular saint buried in the church, his *shrine* took the place of the ancient high altar, and stood immediately east of the altar (Winchester, Westminster, St. Alban's, Durham, Bury, Canterbury); at the back of it ran the procession-path. Occasionally a range of chapels in a transverse aisle formed the extreme east end of the building, as at Durham (Benedictine), Fountains (Cistercian), Bridlington (Austin Canons'); and, again, there was a *choir transept*, which gave the building the form of a patriarchal cross (as at Canterbury, Rochester, Salisbury, and Lincoln). The *lady-chapel*, after the thirteenth century, was very often erected eastward of the main church, but it also held subordinate positions: detached, on the north side of the choir (Bury, Ely, Peterborough); attached, like a chapel south of the nave (Rochester), opening out of the north wing of the transept (Canterbury, Austin Canons', Oxford, Bristol); or at the west end of the nave (Durham, Glastonbury). Sometimes it was a grand prolongation of the presbytery of equal heights and dimensions (Worcester, secular York, London, and Austin Canons', Carlisle). In the *Benedictine conventual buildings*, the *sacristy* was usually on the south side of the presbytery or transept. The sacristan's chamber, or sextrey, was frequently on the north side of the church. The *treasury* for valuables, reliquaries, and charters consisted of chambers which could be easily approached from the church, sometimes detached, and sometimes communicating by stairs with it. The cloisters were sometimes to the northward and sometimes southward, according to the peculiarities of the site; with a single exception (Rochester), they adjoin the nave. On the opposite side to the church was always a refectory, and on the east side of the cloister-garth the chapter-house. Eastward or southward of the cloister, approached by a vaulted passage, was the cloister and home of the aged and sick, called the *infirmary*. In a third or base court, or court of the abbey, were arranged the servants' and farm buildings, and next to the great or church gate, the *almonry*. In close proximity were the lodging of the Superior and guest-houses. The cloister alleys were closed in with an arcade formed of wooden pillars, and shed-roofed; in the great houses they were replaced by grand vaulted walks, elaborately wrought in stone. The *slype* is one of the most distinctive features of the east alley. It formed the passage to the monks' cemetery, and nearly always intervened between the south wall of the transept and the chapter-house. There are instances where it formed the forensic or outer parlour. The chapter-house always occupied the central position in the east alley of the cloister. It was ordinarily an oblong. The Norman chapter-houses were sometimes apsidal, and we possess two exceptional forms which were not square-ended (Worcester and Westminster). Occasionally a prison, or rather a penitential cell, adjoined the chapter-house (Durham). The dormitory adjoined the church, with which it communicated by night-stairs, used in descending to the matin lauds. The day-stairs communicated with the cloister alley; in nearly all cases the dortor was parallel with the east alley (Westminster, Ely, Peterborough); but occasionally, for purposes of drainage, with that on the west (Durham, Worcester). It sometimes runs at right angles to the cloister (Chester, Winchester). Sometimes there was an additional dormitory (St. Alban's). In immediate connexion with the dormitory were the indispensable gong, and common jakys, or necessary house, well drained. The *refectory*, or frater, or fratery, or frater-house, always stood east and west, parallel to the church. At the west end were butteries, and facing the entrance-door was the passage to the kitchen, or else a dresser-window, through which the dishes were passed. In process of time, when discipline was relaxed, only a portion of the monks used the refectory, or it was actually deserted, except on certain days, for a room in which meat dinners were served. This was called the *misericord*, or locally, the loft, the disport, the oriel, or spane. The kitchen usually stood in a little court at the south-west end of the refectory. An important accessory to the refectory is the lavatory. The *common-house* was constructed in the undercroft of the dormitory. There were many parlours or colloques,—places for speech,—the private parlour for those who had been blooded, &c. The *infirmary* consisted of a large hall, with aisles or chambers for the reception of the sick and the aged, and at the east end was a chapel, so that the inmates could hear service even if confined to their beds. On one side was the lodging of the infirmarer, who had also charge of the *dungeon*, in which the grave offenders lay fettered, and fared on bread and water. The *Superior's Lodging* comprised a hall, chapel, guest-rooms, and kitchen. The *Guest-house*, or *Guesten Hall*, consisted of a large hall, with a central fireplace and lateral bed-chambers, and was provided with a chapel and stables. The *almonry* invariably adjoined the

great court gate. The Outer Court, or Abbey Court, contained all the brew- and bake-houses, the granary, laundry, stables, and workshops. Having described in detail the remaining arrangements of a Benedictine house, Mr. Walcott said that there is no missing our way at those six great plans of Westminster, Durham, Canterbury, Chester, or Worcester. We possess early chapter-books, and still earlier inventories, and the customal of the great abbey of England, the rites of the glorious minster of the North, the Monk Edwyn's map of the primatial church, a careful plan of the allotment of Chester at the suppression, and the distribution scheme of Worcester. You will at a glance see correspondences between the ground-plans on the banks of the Wear and the Severn, of Bury and Ely, of Durham and Glastonbury, but it is impossible to do more than trace a faint family-likeness through so many divergencies among those great representative abbeys. 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In the discussion which followed,

Mr. Blashill, in moving a vote of thanks to Mr. Walcott for his paper, said that although it was quite true that there were no two instances throughout Christendom in which the monastic or conventual buildings of the Middle Ages were precisely alike, still they had certain main principles in common. He was glad to see the plan of Shap, referred to by Mr. Walcott, and was also glad that Mr. Walker, of Kendal, had shown so much talent and industry in tracing it out. Mr. Walcott had pointed out the angle between the north transept and the eastern arm of the chancel as a common position for the lady-chapel. Now, at Tewkesbury there were some chapels along the north end of the transept which were for a long time looked upon as being the remains of the chapter-house, but he (Mr. Blashill) had satisfied himself that they were the remains of a thirteenth-century lady-chapel, which existed before the later lady-chapel (afterwards destroyed). The position in the angle was common enough, but the position at the north end of the transept was, he thought, not so common.

Mr. E. Ferrey, in seconding the motion, said he should be glad if Mr. Walcott could explain how it was that there were so very few Carthusian remains existing in England; the most perfect one was, he thought, Mount Grace, already alluded to, and he thought that if these remains were further investigated a great deal of additional light would be thrown on the subject. He was there some months ago, and found the ruin situated in an undrained morass, and overgrown with brambles.

Mr. R. Morrison Marnock said he understood that for the management of their agricultural property the religious establishments built granges; did these granges follow their own arrangement, or were they like the ordinary manor-houses of the period?

Mr. Lacy W. Ridge said he should be glad if Mr. Walcott could give any further information on the subject of Lewes Priory.

A member asked whether the Llanthony Abbey referred to by Mr. Walcott was a Benedictine establishment, and whether it was identical with the building with which the name of Father Ignatius is now associated.

The motion having been carried by acclamation,

Mr. Walcott replied to the points raised in the discussion. He said Mr. Blashill was undoubtedly right as to the position of the thirteenth-century lady-chapel at Tewkesbury; it was similarly placed at Ely, Peterborough, and Bury St. Edmund's. In reply to Mr. Ferrey, he said that unfortunately there were very few Carthusian houses left in England, the only one accessible, although to a small degree, being the Charterhouse in London, but of this hardly anything remained. A strong protest ought to be made not only against the "restoration" of such ruins,—and surely architects had had enough of restoration,—but against their continued neglect; what was wanted was the careful and conservative preservation of such remains. He strongly advised the members of the Association to visit such old remains as were within their reach, and to take their sketch-books with them. In Westminster Abbey itself a day or two might profitably be spent, and the clerk of the works there, who was a most intelligent man, would always be found willing to conduct the architectural student over every part of the building. Then they might go and see a Benedictine nunnery, such as St. Helen's, Bishopsgate; then to St. Mary Overy's, St. Bartholomew's, the Charterhouse, &c. At Barking there still remained a portion of the gatehouse. Sketches of these remains would be of almost incalculable value in years to come. As an instance, he might mention that he had taken a sketch of the last remaining bit of Blackfriars, which had been removed to make way for the new office of the *Times* in Queen Victoria-street. In reply to Mr. Marnock's question, Mr. Walcott said that the granges were at certain distances from the monastery, and were very important appendages thereof. They had no distinctive plan, but generally resembled small monasteries. Very few granges remained in anything like a perfect condition, for wherever there was a grange there was now a farmhouse, and the modern farmhouse made sad havoc with the old remains. In reply to Mr. Ridge, Mr. Walcott said he some years ago published a plan of Lewes Priory. Llanthony, which was an Austin Canons' house, was entirely distinct from the Llanthony of Father Ignatius, which was entirely modern.

GLASGOW INSTITUTE OF ARCHITECTS AND THE ROYAL INSTITUTE.

AT the annual dinner of the Glasgow Institute, the President, Mr. John Baird, in the chair, Mr. David Thomson proposed "Success and prosperity to the kindred societies," coupled with the name of Mr. John Honeyman, F.R.I.B.A. Mr. Honeyman regretted that he could not say that the compliment was deserved by the Royal Institute, and animadverted in very severe terms on the manner in which that body seems practically to ignore the Scottish architects. He referred particularly to the bad taste and bad policy of the committee recently engaged in considering the best means of increasing the usefulness of the Institute, who professed to have put themselves in communication "with the various provincial societies," when in point of fact they had only asked the advice of a few English societies, not one of which represented so large a number of the profession as the Glasgow Institute. He would not object to this if the Institute would but substitute the word English for British in its title. Still, having a strong conviction that the influence of the Institute might be extended in the provinces with advantage to the profession, he would greatly prefer that it should retain its name, and try in future not to forget that Scotland claims to be a part of Britain, and that it contains about a fifth part of all the British architects.

THE CLEANSING OF THE STREETS.

BY fits and starts we hear half-promises made of some special authoritative or legislative enactment to provide for the proper cleansing of the streets of the metropolis by a thorough organisation kept up by public money. Something of the kind was suggested a year ago, in a resolution announced as about to be moved by a member of Parliament active in sanitary matters, and which was to pave the way to a general reform in cleansing and lighting London. It was, perhaps, because the proposed reform was a little more sweeping than need have been that it seems never to have come to a head. There would be plenty of ground for objectors to urge that, on the whole, lighting was not in so very bad a case. But in the matter of dirt, things tend more and more every winter to reach a crisis at which human nature cannot be expected tamely to bear any more. The condition of streets with large traffic, after a thaw, is something indescribable to those who do not habitually experience it, and is a disgrace to somebody or some set of persons, if we could only get it settled exactly who they are. In regard to this matter, the "harmless necessary" crossing-sweeper is in reality an evil and an obstruction. By providing a few passable places here and there, he renders it just possible for the crowd of pedestrians to get about, and prevents the state of things from being absolutely insupportable. If he were suppressed for one day, one such day as those we are alluding to, the dirt nuisance would become so intolerable that it would be felt that a definite campaign against the enemy was a necessity. He just does enough, however, to keep pedestrians from getting desperate. But even were his efforts more extended and systematic, he would equally deserve suppression as an anomaly in political economy and municipal administration. He has not an inch of standing-ground, on any sound social or political principle. He, as every one knows, enters on his sphere of operations with the calculation of an adequate remuneration in the shape of the pence of benevolent passengers; and report says that in an active neighbourhood the speculation is far from being a bad one; but the whole principle of it is ludicrous. If every passenger across a crowded crossing gave the smallest coin of the realm to the sweeper, we should soon see crossing-sweepers driving to the sphere of their profession in their own carriages. In fact, only a very small proportion of passengers have time to think of such a douceur, even if they are inclined to give it; but, of course, they use the crossing all the same. The result is, that a necessary convenience for the prosecution of public traffic is paid for in a very unfair proportion by a small minority of the public, for the benefit of the whole.

The cleansing of the most frequented thoroughfares, at least, where of course both the dirt and the inconvenience it occasions are at a maximum, is a public duty which ought to be regularly and efficiently performed out of public funds. If a street-cleaning brigade were organised, useful employment might be given to many more men than are now engaged in voluntary street-sweeping,—employment which might render a good many idlers of service to the community, and the cost of which would then be properly divided among the public by a very small rate. The need of systematic operations is not, of course, confined to the "crossings." The foot pavements of many of our principal streets are, in rainy weather or after a thaw, like so many ditches, especially in cases (not a few) where the flags are laid with insufficient fall. It is absolutely essential that this public nuisance, increasing as population and traffic increase, should be systematically dealt with. In the meantime, we counsel the benevolent among our readers to harden their hearts and button up their pockets against the crossing-sweeper, seeing that by the thoughtless bestowal of their good-natured penny they are only perpetuating a wrong state of things, and taxing themselves for the public benefit in a manner which no one has any right to expect from them.

A Town Clock for High Wycombe.—The committee of the High Wycombe New Clock Fund have decided to recommend the subscribers to accept the tender of Messrs. Gillett & Bland for providing and fitting a new illuminated clock in the church tower. The total cost will be about 500*l*.

EXHIBITION OF THE ROYAL SCOTTISH ACADEMY.

THE fiftieth exhibition of the Royal Scottish Academy is now open, and having arrived at such a period of its existence, we may consider it as one of the permanent institutions of the country.

The tendency of academies and exhibitions of art is not altogether towards unmixed good, either as regards the artists themselves or the public at large. That annual exhibitions of the works of living artists do create a feeling for art amongst the people is evinced by the throngs which crowd the galleries, and the eagerness with which the merits of the various productions are canvassed. The comments made are, however, too frequently of a very superficial nature, showing that the true end of art is not understood, and that what is striking or pretty is often preferred to what possesses higher qualities. The artist is thus tempted to neglect the higher ideal, to court popularity, to look to the material rather than the æsthetic element, and to paint up to a high key so as to arrest the attention of the observer.

The exhibition room, again, is apt to be considered rather as a bazaar for the sale of works of art than as a means for educating and refining the taste of the people. The circumstance, too, that any one may enter the lists and have a chance of showing what he can do, tends to the production of a crowd of aspirants, the great majority of whom, with a misdirected ambition, waste their time in the useless labour of producing that which is stale, flat, and unprofitable.

We have here exhibited 1,090 works, and nearly an equal number have been rejected. Two thousand products of human labour, of which only a percentage are of any use, and a great part of which are worse than useless. The heartbreak amongst the unsuccessful is melancholy, the complaints of partiality and unfairness are lamentable; yet, when we look at the works accepted and hung on the walls, we cannot help thinking that many of them would have been better elsewhere. "Mediocrity in art is less tolerable than in aught else."

Last year there was an exhibition of rejected works, but this appeal to the public sufficiently proved the groundlessness of the complaints of the authors of these works. Far be it from us to attempt to put a check upon the endeavours of struggling merit. There is probably no more delightful life than that of the successful artist, whose daily work consists in the endeavour to realise the conceptions of his mind; yet even he will express himself as not quite satisfied, and confess that he falls short of his ideal. But the ideas must be there, and the power of realising them can only be attained by diligent study and hard work. It is to be feared that too many choose art as a profession under the mistaken notion that they will escape drudgery, and lead a pleasant, free, and easy life; and to such we repeat, with emphasis, the quotation from Ruskin, on the title-page of the catalogue:—"Painting, or art generally, as such, with its technicalities, difficulties, and peculiar ends, is nothing but a noble and expressive language, invaluable as the vehicle of thought."

Lively hopes were at one time entertained that in Scotland a new and distinctive school of art might be formed. Judging from precedent, the expectation was not unreasonable. In the Northern States of Italy, in the palmy days of art, the several small States had each its school, and why might Scotland not have one as distinguished from England? Many reasons, more or less feasible, could be adduced to account for the non-fruition of these expectations, but the most obvious one is, we think, the fact of the existence of the academies and exhibitions. The Royal Academy of England opens its doors to all nationalities; the Scot seems to be particularly welcomed, and the greater inducements held out cause a periodical exodus of those Scotsmen who have displayed special merit. These become merged in the larger society, and are influenced by new associations, and thus all distinctiveness is lost. The growth of a new school becomes an impossibility, and although there are two academies, there is only one school.

As a consequence of this state of matters, a considerable number of the works annually exhibited in Edinburgh,—and these generally the most noteworthy,—have previously been exhibited in London. This renders our task lighter than it would otherwise be, and there remains only to perform the duty of shortly referring to such works, exhibited for the first time, which are prominent, either as regards subject or manner of treatment. It may be well, however, as showing how the exhibition is made up, to state that the paintings formerly exhibited comprise examples of the handiwork of J. E. Millais, Alma Tadema, J. C. Horsley, Sir F. Grant, J. Pettie, W. Q. Orchardson, E. Long, J. Sant, Josef Israels, E. Frere, James Archer, E. Nichol, J. W. Oakes, T. Graham, K. Halswell, John Faed, J. Linnell, jun., R. Herdman, and others.

Proceeding in the order of the catalogue, we first notice the seapiece by John Nisbet, in which he has succeeded in catching an evanescent gleam of sunlight which touches part of the sea-cliffs and the tips of the wavelets, and so has imparted to the scene a poetical element. Beattie Brown has made a like endeavour in the "Woods of Hawthornden,"—

> "When the woods of autumn all around the vale
> Have put their glory on," —

and has been fairly successful in rendering the effect of sunshine pouring through foliage.

With a firm brush and true colour, John M'Whirter gives a graphic representation of the beautiful "Runic Cross of St. Martin, Iona."

Age imparts new beauty to a picture which is soundly painted, the first glossiness disappears, the vehicle employed is not obtruded upon us, and we look upon it more as an emanation from the brain than as an example of dexterous handiwork. "The Gipsy Mother," by the late Graham Gilbert, has arrived at that stage, and very pleasing it is for the eye to rest upon its subdued but rich and harmonious colour, after the fatigue caused by the glare and glitter around.

William Mactaggart is as vigorous as ever in his manipulation, and more delicate than usual in his colouring. "On the Sandhills in Sunshine," we see a young lady in charge of two rosy little pets, who thoroughly enjoy the position, and make us long to join them in their healthy innocent employment of building castles of sand. When Mr. Paton overcomes his prevailing weakness for mauve, pink, and purple he produces very acceptable work. "In the Deer Forest of Mamore" is much more satisfactory than "Upper Morelaggan, Loch Long," which is spoiled by the sickly pink introduced into the sky, which is crude and out of tone with the rest of the landscape, a fine scene boldly modelled and otherwise good in colour.

One, who has never been in an orange grove during "The Orange Harvest," might be apt to say to W. E. Lockhart that he had surely exaggerated the effect of the glints of sunlight as they fall upon the figures of those gathering the fruit; and he might probably reply, with justice, that he had not done so. Be that as it may, the effect as he has depicted it is unpleasing, and detracts from a work which is otherwise well handled, with the exception, perhaps, of a little looseness in the drawing of one of the figures. W. F. Vallence appears to greater advantage in such subjects as "The Turn of the Tide" than when he attempts to delineate traits of Irish humour, after (and a good way after) Erskine Nichol. The scene is redolent of the sea breeze, the swirl of the breakers is well suggested, but the boats on the beach seem to be unfinished; the graceful sweep of the timbers, with their subtile lines, is always a beautiful feature in such objects, and should not be slurred over.

James Drummond has never deviated from the line of historical painting; his subjects are invariably chosen from Scottish history, and he is about the last of the old band who, had they been supported, might have formed a new school. "A Scene in Grayfriars Churchyard, A.D. 1679," represents the prisoners taken at the battle of Bothwell Bridge, who were confined for a period of five months in the churchyard without shelter; they are seen at their devotions, reading or earnestly debating upon spiritual matters. To the right a group of sympathising spectators are timidly observing them through the iron bars; and to the left, and within the enclosure, stands a grim sentinel. The scene is not invested by the artist with the interest which so tragical a scene is fitted to call forth, and the execution is weak and unsatisfactory.

George Hay finds a rich store of incident in the works of Sir Walter Scott. In the scene from "Redgauntlet" where "Peter Peebles captures Allen Fairford," he has hardly realised the humour of the episode, and he has made the crazy litigant rather too much of a guy, especially as regards the huge jack-boots, in which he is almost swallowed up.

W. Fettes Douglas is decidedly eccentric. Last year, and this year also, this phase of his

great court gate. The Outer Court, or Abbey Court, contained all the brew- and bake-houses, the granary, laundry, stables, and workshops. Having described in detail the remaining arrangements of a Benedictine house, Mr. Walcott said that there is no missing our way at those six great plans of Westminster, Durham, Canterbury, Chester, or Worcester. We possess early chapter-books, and still earlier inventories, and the customal of the great abbey of England, the rites of the glorious minster of the North, the Monk Edwyn's map of the primatial church, a careful plan of the allotment of Chester at the suppression, and the distribution scheme of Worcester. You will at a glance see correspondences between the ground-plans on the banks of the Wear and the Severn, of Bury and Ely, of Durham and Glastonbury, but it is impossible to do more than trace a faint family-likeness through so many divergencies among those great representative abbeys. 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We must be content with knowing as much as the past has spared to us, and this will teach us caution and temperate respectful consideration when testing our own deductions with those of contemporaries or of the men who have preceded us. This will be a far safer course than indulgence in the hope of making new discoveries, or of inventing a new order or style. We may by patience add largely to their acquisitions; but we should be grateful to the pioneers who cleared the way for our advance. There are stores of information lying yet unused in our museums, manuscripts, and libraries, and we need diligent students to delve and gather out thence such accessions to what we at present know; but there are more treasures of information buried underground, still hidden from our eyes, and when well guided and carefully overseen, the best expositors are practically the pickaxe and the spade.

In the discussion which followed,

Mr. Blashill, in moving a vote of thanks to Mr. Walcott for his paper, said that although it was quite true that there were no two instances throughout Christendom in which the monastic or conventual buildings of the Middle Ages were precisely alike, still they had certain main principles in common. He was glad to see the plan of Shap, referred to by Mr. Walcott, and was also glad that Mr. Walker, of Kendal, had shown so much talent and industry in tracing it out. Mr. Walcott had pointed out the angle between the north transept and the eastern arm of the chancel as a common position for the lady-chapel. Now, at Tewkesbury there were some chapels along the north end of the transept which were for a long time looked upon as being the remains of the chapter-house, but he (Mr. Blashill) had satisfied himself that they were the remains of a thirteenth-century lady-chapel, which existed before the later lady-chapel (afterwards destroyed). The position in the angle was common enough, but the position at the north end of the transept was, he thought, not so common.

Mr. E. Ferrey, in seconding the motion, said he should be glad if Mr. Walcott could explain how it was that there were so very few Carthusian remains existing in England; the most perfect one was, he thought, Mount Grace, already alluded to, and he thought that if these remains were further investigated a great deal of additional light would be thrown on the subject. He was there some months ago, and found the ruin situated in an undrained morass, and overgrown with brambles.

Mr. R. Morrison Marnock said he understood that for the management of their agricultural property the religious establishments built granges; did these granges follow their own arrangement, or were they like the ordinary manor-houses of the period?

Mr. Lacy W. Ridge said he should be glad if Mr. Walcott could give any further information on the subject of Lewes Priory.

A member asked whether the Llanthony Abbey referred to by Mr. Walcott was a Benedictine establishment, and whether it was identical with the building with which the name of Father Ignatius is now associated.

The motion having been carried by acclamation,

Mr. Walcott replied to the points raised in the discussion. He said Mr. Blashill was undoubtedly right as to the position of the thirteenth-century lady-chapel at Tewkesbury; it was similarly placed at Ely, Peterborough, and Bury St. Edmund's. In reply to Mr. Ferrey, he said that unfortunately there were very few Carthusian houses left in England, the only one accessible, although to a small degree, being the Charterhouse in London, but of this hardly anything remained. A strong protest ought to be made not only against the "restoration" of such ruins,—and surely architects had had enough of restoration,—but against their continued neglect; what was wanted was the careful and conservative preservation of such remains. He strongly advised the members of the Association to visit such old remains as were within their reach, and to take their sketch-books with them. In Westminster Abbey itself a day or two might profitably be spent, and the clerk of the works there, who was a most intelligent man, would always be found willing to conduct the architectural student over every part of the building. Then they might go and see a Benedictine nunnery, such as St. Helen's, Bishopsgate; then to St. Mary Overy's, St. Bartholomew's, the Charterhouse, &c. At Barking there still remained a portion of the gatehouse. Sketches of these remains would be of almost incalculable value in years to come. As an instance, he might mention that he had taken a sketch of the last remaining bit of Blackfriars, which had been removed to make way for the new office of the *Times* in Queen Victoria-street. In reply to Mr. Marnock's question, Mr. Walcott said that the granges were at certain distances from the monastery, and were very important appendages thereof. They had no distinctive plan, but generally resembled small monasteries. Very few granges remained in anything like a perfect condition, for wherever there was a grange there was now a farmhouse, and the modern farmhouse made sad havoc with the old remains. In reply to Mr. Ridge, Mr. Walcott said he some years ago published a plan of Lewes Priory. Llanthony, which was an Austin Canons' house, was entirely distinct from the Llanthony of Father Ignatius, which was entirely modern.

GLASGOW INSTITUTE OF ARCHITECTS AND THE ROYAL INSTITUTE.

At the annual dinner of the Glasgow Institute, the President, Mr. John Baird, in the chair, Mr. David Thomson proposed "Success and prosperity to the kindred societies," coupled with the name of Mr. John Honeyman, F.R.I.B.A. Mr. Honeyman regretted that he could not say that the compliment was deserved by the Royal Institute, and animadverted in very severe terms on the manner in which that body seems practically to ignore the Scottish architects. He referred particularly to the bad taste and bad policy of the committee recently engaged in considering the best means of increasing the usefulness of the Institute, who professed to have put themselves in communication "with the various provincial societies," when in point of fact they had only asked the advice of a few English societies, not one of which represented so large a number of the profession as the Glasgow Institute. He would not object to this if the Institute would but substitute the word English for British in its title. Still, having a strong conviction that the influence of the Institute might be extended in the provinces with advantage to the profession, he would greatly prefer that it should retain its name, and try in future not to forget that Scotland claims to be a part of Britain, and that it contains about a fifth part of all the British architects.

THE CLEANSING OF THE STREETS.

BY fits and starts we hear half-promises made of some special authoritative or legislative enactment to provide for the proper cleansing of the streets of the metropolis by a thorough organisation kept up by public money. Something of the kind was suggested a year ago, in a resolution announced as about to be moved by a member of Parliament active in sanitary matters, and which was to pave the way to a general reform in cleansing and lighting London. It was, perhaps, because the proposed reform was a little more sweeping than need have been that it seems never to have come to a head. There would be plenty of ground for objectors to urge that, on the whole, lighting was not in so very bad a case. But in the matter of dirt, things tend more and more every winter to reach a crisis at which human nature cannot be expected tamely to bear any more. The condition of streets with large traffic, after a thaw, is something indescribable to those who do not habitually experience it, and is a disgrace to somebody or some set of persons, if we could only get it settled exactly who they are. In regard to this matter, the "harmless necessary" crossing-sweeper is in reality an evil and an obstruction. By providing a few passable places here and there, he renders it just possible for the crowd of pedestrians to get about, and prevents the state of things from being absolutely insupportable. If he were suppressed for one day, one such day as those we are alluding to, the dirt nuisance would become so intolerable that it would be felt that a definite campaign against the enemy was a necessity. He just does enough, however, to keep pedestrians from getting desperate. But even were his efforts more extended and systematic, he would equally deserve suppression as an anomaly in political economy and municipal administration. He has not an inch of standing-ground, on any sound social or political principle. He, as every one knows, enters on his sphere of operations with the calculation of an adequate remuneration in the shape of the pence of benevolent passengers; and report says that in an active neighbourhood the speculation is far from being a bad one; but the whole principle of it is ludicrous. If every passenger across a crowded crossing gave the smallest coin of the realm to the sweeper, we should soon see crossing-sweepers driving to the sphere of their profession in their own carriages. In fact, only a very small proportion of passengers have time to think of such a douceur, even if they are inclined to give it; but, of course, they use the crossing all the same. The result is, that a necessary convenience for the prosecution of public traffic is paid for in a very unfair proportion by a small minority of the public, for the benefit of the whole.

The cleansing of the most frequented thoroughfares, at least, where of course both the dirt and the inconvenience it occasions are at a maximum, is a public duty which ought to be regularly and efficiently performed out of public funds. If a street-cleaning brigade were organised, useful employment might be given to many more men than are now engaged in voluntary street-sweeping,—employment which might render a good many idlers of service to the community, and the cost of which would then be properly divided among the public by a very small rate. The need of systematic operations is not, of course, confined to the "crossings." The foot pavements of many of our principal streets are, in rainy weather or after a thaw, like so many ditches, especially in cases (not a few) where the flags are laid with insufficient fall. It is absolutely essential that this public nuisance, increasing as population and traffic increase, should be systematically dealt with. In the meantime, we counsel the benevolent among our readers to harden their hearts and button up their pockets against the crossing-sweeper, seeing that by the thoughtless bestowal of their good-natured penny they are only perpetuating a wrong state of things, and taxing themselves for the public benefit in a manner which no one has any right to expect from them.

A Town Clock for High Wycombe.—The committee of the High Wycombe New Clock Fund have decided to recommend the subscribers to accept the tender of Messrs. Gillett & Bland for providing and fitting a new illuminated clock in the church tower. The total cost will be about 500*l*.

EXHIBITION OF THE ROYAL SCOTTISH ACADEMY.

THE fiftieth exhibition of the Royal Scottish Academy is now open, and having arrived at such a period of its existence, we may consider it as one of the permanent institutions of the country.

The tendency of academies and exhibitions of art is not altogether towards unmixed good, either as regards the artists themselves or the public at large. That annual exhibitions of the works of living artists do create a feeling for art amongst the people is evinced by the throngs which crowd the galleries, and the eagerness with which the merits of the various productions are canvassed. The comments made are, however, too frequently of a very superficial nature, showing that the true end of art is not understood, and that what is striking or pretty is often preferred to what possesses higher qualities. The artist is thus tempted to neglect the higher ideal, to court popularity, to look to the material rather than the æsthetic element, and to paint up to a high key so as to arrest the attention of the observer.

The exhibition room, again, is apt to be considered rather as a bazaar for the sale of works of art than as a means for educating and refining the taste of the people. The circumstance, too, that any one may enter the lists and have a chance of showing what he can do, tends to the production of a crowd of aspirants, the great majority of whom, with a misdirected ambition, waste their time in the useless labour of producing that which is stale, flat, and unprofitable.

We have here exhibited 1,090 works, and nearly an equal number have been rejected. Two thousand products of human labour, of which only a percentage are of any use, and a great part of which are worse than useless. The heartbreak amongst the unsuccessful is melancholy, the complaints of partiality and unfairness are lamentable; yet, when we look at the works accepted and hung on the walls, we cannot help thinking that many of them would have been better elsewhere. "Mediocrity in art is less tolerable than in aught else."

Last year there was an exhibition of rejected works, but this appeal to the public sufficiently proved the groundlessness of the complaints of the authors of these works. Far be it from us to attempt to put a check upon the endeavours of struggling merit. There is probably no more delightful life than that of the successful artist, whose daily work consists in the endeavour to realise the conceptions of his mind; yet even he will express himself as not quite satisfied, and confess that he falls short of his ideal. But the ideas must be there, and the power of realising them can only be attained by diligent study and hard work. It is to be feared that too many choose art as a profession under the mistaken notion that they will escape drudgery, and lead a pleasant, free, and easy life; and to such we repeat, with emphasis, the quotation from Ruskin, on the title-page of the catalogue:—"Painting, or art generally, as such, with its technicalities, difficulties, and peculiar ends, is nothing but a noble and expressive language, invaluable as the vehicle of thought."

Lively hopes were at one time entertained that in Scotland a new and distinctive school of art might be formed. Judging from precedent, the expectation was not unreasonable. In the Northern States of Italy, in the palmy days of art, the several small States had each its school, and why might Scotland not have one as distinguished from England? Many reasons, more or less feasible, could be adduced to account for the non-fruition of these expectations, but the most obvious one is, we think, the fact of the existence of the academies and exhibitions. The Royal Academy of England opens its doors to all nationalities; the Scot seems to be particularly welcomed, and the greater inducements held out cause a periodical exodus of those Scotsmen who have displayed special merit. These become merged in the larger society, and are influenced by new associations, and thus all distinctiveness is lost. The growth of a new school becomes an impossibility, and although there are two academies, there is only one school.

As a consequence of this state of matters, a considerable number of the works annually exhibited in Edinburgh,—and these generally the most noteworthy,—have previously been exhibited in London. This renders our task lighter than it would otherwise be, and there remains only to perform the duty of shortly referring to such works, exhibited for the first time, which are prominent, either as regards subject or manner of treatment. It may be well, however, as showing how the exhibition is made up, to state that the paintings formerly exhibited comprise examples of the handiwork of J. E. Millais, Alma Tadema, J. C. Horsley, Sir F. Grant, J. Pettie, W. Q. Orchardson, E. Long, J. Sant, Josef Israels, E. Frere, James Archer, E. Nichol, J. W. Oakes, T. Graham, K. Halswell, John Faed, J. Linnell, jun., R. Herdman, and others.

Proceeding in the order of the catalogue, we first notice the seapiece by John Nisbet, in which he has succeeded in catching an evanescent gleam of sunlight which touches part of the sea-cliffs and the tips of the wavelets, and so has imparted to the scene a poetical element. Beattie Brown has made a like endeavour in the "Woods of Hawthornden,"—

> "When the woods of autumn all around the vale
> Have put their glory on,"—

and has been fairly successful in rendering the effect of sunshine pouring through foliage.

With a firm brush and true colour, John M'Whirter gives a graphic representation of the beautiful "Runic Cross of St. Martin, Iona."

Age imparts new beauty to a picture which is soundly painted, the first glossiness disappears, the vehicle employed is not obtruded upon us, and we look upon it more as an emanation from the brain than as an example of dexterous handiwork. "The Gipsy Mother," by the late Graham Gilbert, has arrived at that stage, and very pleasing it is for the eye to rest upon its subdued but rich and harmonious colour, after the fatigue caused by the glare and glitter around.

William Mactaggart is as vigorous as ever in his manipulation, and more delicate than usual in his colouring. "On the Sandhills in Sunshine," we see a young lady in charge of two rosy little pets, who thoroughly enjoy the position, and make us long to join them in their healthy innocent employment of building castles of sand. When Mr. Paton overcomes his prevailing weakness for mauve, pink, and purple he produces very acceptable work. "In the Deer Forest of Mamore" is much more satisfactory than "Upper Morelaggan, Loch Long," which is spoiled by the sickly pink introduced into the sky, which is crude and out of tone with the rest of the landscape, a fine scene boldly modelled and otherwise good in colour.

One, who has never been in an orange grove during "The Orange Harvest," might be apt to say to W. E. Lockhart that he had surely exaggerated the effect of the glints of sunlight as they fall upon the figures of those gathering the fruit; and he might probably reply, with justice, that he had not done so. Be that as it may, the effect as he has depicted it is unpleasing, and detracts from a work which is otherwise well handled, with the exception, perhaps, of a little looseness in the drawing of one of the figures. W. F. Vallence appears to greater advantage in such subjects as "The Turn of the Tide" than when he attempts to delineate traits of Irish humour, after (and a good way after) Erskine Nichol. The scene is redolent of the sea breeze, the swirl of the breakers is well suggested, but the boats on the beach seem to be unfinished; the graceful sweep of the timbers, with their subtile lines, is always a beautiful feature in such objects, and should not be slurred over.

James Drummond has never deviated from the line of historical painting; his subjects are invariably chosen from Scottish history, and he is about the last of the old band who, had they been supported, might have formed a new school. "A Scene in Grayfriars Churchyard, A.D. 1679," represents the prisoners taken at the battle of Bothwell Bridge, who were confined for a period of five months in the churchyard without shelter; they are seen at their devotions, reading or earnestly debating upon spiritual matters. To the right a group of sympathising spectators are timidly observing them through the iron bars; and to the left, and within the enclosure, stands a grim sentinel. The scene is not invested by the artist with the interest which so tragical a scene is fitted to call forth, and the execution is weak and unsatisfactory.

George Hay finds a rich store of incident in the works of Sir Walter Scott. In the scene from "Redgauntlet" where "Peter Peebles captures Allen Fairford," he has hardly realised the humour of the episode, and he has made the crazy litigant rather too much of a guy, especially as regards the huge jack-boots, in which he is almost swallowed up.

W. Fettes Douglas is decidedly eccentric. Last year, and this year also, this phase of his

character is evinced by his choosing a narrow upright canvas, upon which he paints a scene from a height looking down upon the roofs of houses in the foreground, and thence out to sea, where a long line of "Herring Boats" are "entering Stonehaven Harbour."

G. Paul Chalmers is very fastidious as to what he exhibits. The only specimen of his work shown this year is a head, which, for technical excellence, is unsurpassed by anything in the galleries. There is here no sleight of hand or exaggeration of treatment, but downright careful manipulation, aided by a fine eye for colour.

J. M. Barclay, long favourably known as a portrait-painter, has made an essay at historical painting, choosing as his subject "The Gowery Conspiracy," at the moment when Ruthven breaks into the king's apartment, and attempts to bind his hands. The incident is graphically rendered, and the colouring rich and harmonious, but there is a lack of muscular action, especially in the limbs of Ruthven, and the man in armour who guards the door looks a lifeless dummy.

Very simple and pleasing is Thomas Graham's pastoral, "From his Flocks Strayed." The shepherd who leaves his flocks for the more attractive company of his sweetheart, as well as the girl herself, do not look like models got up for the occasion, but are real rustics, comely, but without artificiality, either in dress or manner, and the landscape is in admirable keeping.

Robert Gibb, in choosing such a subject as the "Death of St. Columba," has aimed high, and has fairly succeeded in his aim. The grouping is effective, the face of the saint expressive, as are those of the attendant monks and choristers. The manipulation is broad and free, and the general tone satisfactory. Mr. Gibb deserves encouragement to proceed in the path which he has chosen.

W. B. Hole also chooses a theme from the olden times, but one not of a serious nature, entitled, "Taken Unawares." A friar of orders grey has fallen asleep after partaking of the hospitality of a baronial hall, whilst a jester draws his likeness upon a slate, and the attendants watch the proceeding with interest. The contrast between the happy unconsciousness of the dozing friar and the jolly, free-and-easy manner of the jester, is well hit off. The drawing, manipulation, and composition are good, but the colour is in parts crude and raw, especially in the costume of the jester.

We have only noticed what appear to us to be the principal works exhibited; but there are many others which, although less prominent, are well worthy of attention. As we have lingered about the galleries the impression has grown upon us that the exhibition as a whole is up to the average, and only wants one or two first-rate works to make it the best that has yet appeared in the rooms of the Scottish Academy.

THE TESTING AND STRENGTH OF MATERIALS.*

Steel.—The simplest definition of the term *steel* that I have met with was supplied to me by a Sheffield firm, and is as follows:—"Steel, a combination or alloy of iron that will forge, harden, and temper." There are various kinds of steel, such as carbon cast steel, tungstein cast steel, chrome cast steel, cyanogen cast steel, and titanium cast steel, and several other metals have been alloyed with iron, to make steel. There is also blistered steel, which is made from malleable bar iron, by a process called cementation; German steel, which is made directly from the ore, and sometimes from pig-iron, in the Catalan forge. The line between cast iron and steel is,—when it is capable of being forged it is steel, and when it will not forge it is cast iron; and the line between malleable iron and steel is, when it will harden and temper it is steel, and when it will not harden and temper it is malleable iron. It is well known to manufacturers and to many others that steel of the strength of 33 to 36 tons per inch can be made, and is made, in large quantities, at moderate prices, possessing all the toughness and malleability required in engineering structures. We have this on the authority of Mr. W. H. Barlow; and yet engineers, as a rule, in England do not seem to take kindly to it, for bridge-building, at any rate. In this respect we are behind our American friends. The malleability of steel will be shown by the following test:—A piece of rail, weighing 80 lb. per yard, and 12 ft. in length, was held by one end and twisted at the other, and made 6¼ complete revolutions before it broke. The fracture occurred at one end, leaving about 11 ft. of the rail in the twisted form which had been given to it. In this twisted state the rail was laid on two bearings, 3 ft. 6 in. apart, and subjected to the blows of 1 ton weight falling 30 ft., and it bore one of these blows without breaking. Mr. Barlow gives the limiting span of a girder, in iron, at 5 tons per inch strain, as 600 ft., and in steel, at 8 tons per inch strain, as 960 ft. We can obtain an idea of the effect of introducing steel by this, and Mr. Barlow says, assuming a load in addition to the weight of the girder of 1 ton to the foot, the relative weights under these circumstances would be:—

Span.	Weight of steel girder in tons.	Weight of iron girder in tons.
200	57	100
300	150	300
400	320	800

With these facts before us, surely we ought to turn our attention to this metal, and get the Board of Trade to state a limiting strain, as they do in iron.

Testing Railway Steel Axles.—The mode of testing usually adopted by Continental railway engineers is to take one out of each hundred axles, and to test it to destruction. It is usually stipulated in the specification that the whole lot may be rejected if this one, or at most a second, do not stand the trial, as several English makers have found to their cost. Some of these tests are very severe. Such is that required by the Austrian Northern Railway, according to which all 5-in. steel axles, when set on supports nearly 5 ft. apart, must undergo blows from a weight of about 7 cwt. falling from a height of nearly 19 ft., increased by 2 ft. for each successive blow. In this way it must withstand a bend of 9 in., and a further bending back of 9 in., the operations being continued until the axle has withstood more than 6,000 foot-pounds. A lighter test is that of the Southern Railway Company, who require for their 4½-in. steel axles that, with a distance between the supports of nearly 5 ft., they shall withstand a bend of more than 9½ in., under a 7-cwt. monkey falling from a height of nearly 15 ft. The axles must then be capable of being bent back straight in the same manner without breaking. In fact, almost every other company's engineer has a different test, differing as to the distance between the supports, the weight of the monkey, and the height of its fall. In truth, the process is merely that generally adopted for rails of which a certain per-centage is taken haphazard out of the lot and bent or fractured.

Malleable Cast Iron.—In 1804 Mr. S. Lucas, of Sheffield, patented a mode of producing malleable cast iron. His specification clearly shows the theory of conversion. The firm, Edward Lucas & Son, of Dronfield Foundry, are still engaged in its manufacture. In Mr. Lucas's specification, No. 2,767, he describes the process thus:—The cast iron being first made or cast into such form as may be most convenient for the purposes for which it is afterwards intended, is to be put into a steel-converting or other proper furnace, together with a suitable quantity of ironstone, iron ore, some of the metallic oxides, lime, or any combination of these (previously reduced into powder or small pieces), or with any other substance capable of combining with or absorbing the carbon of the crude iron. A degree of heat is then to be applied so intense as to effect a union of the carbon of the cast iron with the substance made use of, and continued during so long a time as shall be found necessary to make the cast iron either partially or perfectly malleable, according to the purposes for which it may be wanted. If it be intended to make the iron perfectly malleable, from one-half to two-thirds of its weight of ironstone, iron ore, or other substance will be found necessary; if only partially so, a much less quantity will be sufficient. Five or six days and nights will in general be found sufficient during which to continue the heat, which, towards the close of the process, cannot be too great. Care should be taken that the pieces of cast iron be not of too great thickness, as it would have the effect of lengthening the process; but the proportion of the several substances made use of, and the degree and duration of the heat to be applied, must greatly depend not only on the nature of those substances, but also on the nature or quality of the pig or cast iron employed, a knowledge of which can be obtained only by experience. The cast iron to be rendered malleable and the substances to be made use of for the purpose, may be placed in the furnace in alternate layers, and in order to prevent the iron-stone or iron ore from adhering to the iron, a thin layer of sand may be placed between them. The colour, both externally and of fractured specimens, approaches that of steel. The "malleableised" metal takes readily a very fine polish, which is not easily destroyed upon exposure to moisture. Malleable cast iron is easily stamped, drawn, and hammered without heating. It can also be worked well under the hammer at a low heat, and at this stage hammering appears to improve the grain. Very small sections may occasionally be welded, but as a rule, malleable cast iron is not weldable. It is readily brazed with copper. It melts only under a very high heat, and it stands fire so well that it is employed for foundry ladles, crucibles for gold and silver, and for the tubes of some descriptions of boilers. Malleable cast iron may be case-hardened more readily and to a greater depth than wrought iron. The castings are not blistered, scaled, or warped in the process, and the case-hardening may be effected either with bones, hoofs, or leather, in the ordinary manner, or with prussiate of potash. The articles made of malleable cast iron are all kinds of machinery fittings, steam-boiler tubes, gas joints, horse-shoes, bridle-bits, stirrups, gun fittings, bed fittings, railway signal pulleys, buffer and axle boxes, tram-car wheels, cross-heads, portable engine chimney caps and bases, bows for man-holes of boilers, link reversing and expansion gear, cranks, pistons, and garden tools; in fact, malleable cast iron is used in place of wrought iron to a very great extent, especially since labour became so very dear, as in many cases it comes in cheaper than forged work, when the article is of a difficult form or shape; but it cannot compete successfully with forgings when the articles required are heavy, and tolerably easy to forge. Castings can be annealed up to any weight and size; the time taken for annealing light castings is about seven, and for heavy fourteen days. The metal chiefly used in the production of malleable castings is the finest brands of charcoal, and hematite pigs specially prepared. Its advantage over cast iron is that the same strength may be obtained with half the weight, and that it is easier to finish, and takes a finer polish. Unlike wrought iron, it is not liable to defective welds, and complicated patterns and shapes can be produced with ease at a reasonable cost. It is more easily worked than steel, and is freer from defects through blowing or honey-combing. A superior kind of small soft casting is made by the Nottingham Malleable Iron Company, which, from being subject to a partial annealing, is very easily given a bright polish, the difference in cost being fully recouped by saving in labour and tools. The specimens of malleable cast iron in Mr. Kirkaldy's museum that he has tested are well worth examination:—he allowed me every facility in passing through his works, and I am indebted to him for much information he kindly gave me.

Phosphor Bronze is the usual alloy of copper and tin, with the addition of some phosphorus: by varying the quantity of the latter, the alloy can be made from a ductile and malleable, but exceedingly tough, quality, to such as approach the main qualities of steel. The metal when cast has great fluidity, and fills the moulds perfectly to the smallest details; consequently it is well adapted to the production of works of art or decoration, as well as for engineering purposes. Ordinary bronze, by the admixture of phosphorus, changes its qualities and characteristics: the colour becomes warmer, more like that of gold when mixed with copper, the grain or fracture approaches that of steel, and the toughness, elasticity, and tensile strength are greatly increased. The uses to which phosphor bronze are applied are very numerous; to cite a few I may mention bearings for railway car-axles and machinery, &c., door keys, and inner plating for iron safes, tamping-bars for miners, and scissors, rollers, knives, and hammers for gunpowder mills: these tools are very hard, and can with difficulty be touched by a file, yet have the same advantage as copper in not emitting any sparks. It is also used for rock-drills, blast furnace tuyères, toothed gearing for rolling-mills, cavalry fitments, excentric straps, pump cylinders, piston packing, and other forms of mechanism; and used as a bell metal it is said to give a clear and louder ring than any other compound, for as the clappers can be made heavier, a greater volume of sound can be produced without risk of cracking the bells. As regards first cost, the price of phosphor bronze is from 30 to 40 per cent. higher than that of gun-metal, composed of about four parts copper with one part tin, but placed

* By Mr. R. M. Bancroft. See p. 163, *ante*.

in the very trying position of a railway-carriage bearing, it has been found by actual and long continued trial that 1*l.* worth of phosphor bronze will out-wear 4*l.* worth of the gun-metal. Compared with wrought iron, it appears from a drop test made that it took thirteen falling blows on a bar of phosphor bronze to bend it 1 in., against eight blows on a bar of forged charcoal iron,—the test bars being 6 in. long by 2 in. wide by ½ in. thick, the drop weight being 148 lb., and the height of stroke 12 in. Experiments on phosphor bronze made in the Royal Arsenal at Turin show an absolute resistance of 63,000 lb. per square inch. Mr. Kirkaldy sent specimen test bars for the inspection of the members of the Civil and Mechanical Engineers' Society, and a vote of thanks was passed to him for his kindness in so doing.

Portland Cement.—Ten years back Portland cement was specified by engineers to be 110 lb. weight per bushel, and 500 lb. tensile strain on a briquette 2½ in. area, or 222 lb. per inch. In some of the tests made for Mr. Joseph Cubitt during the building of Blackfriars Bridge, the tensile strain was 325 lb. per inch of section. The proper test now should be about 115 lb. per bushel, or 90 lb. per cubic foot, and the average tensile strain of 6 briquettes should equal 350 lb. per square inch after a week's immersion in water. It has also been proposed to apply a sieve test of 80 per cent. of the cement to pass a sieve of 2,250 meshes to the square inch, but to get the weight the cement has to be coarsely ground, and the coarse particles are themselves so many elements of danger. A simple test that I have heard one of our members give, when others cannot be applied, is making a small square or pat, and dropping it into water. If the sharp edges crack or break after a short time, the cement is too hot or fresh, or is inferior in quality. Michele's patent cement-testing machine is recommended and generally specified for all large works where cements are extensively used. The price varies from 24*l.* to 28*l.* each.

In the matter of timber structures, I would like to mention that, wherever creosoted timber can be applied, it seems advisable to use it, because it not only resists the changes of weather, but also adds to the strength of the wood. On the authority of Messrs. Armstrong & Foster, Sunderland, we know that a series of experiments proved this to be the case. Pieces of Memel fir and Scotch fir, each measuring 2 ft. 6 in. by 2 in. by 1 in., with a 2 ft. bearing, broke as follows:—

	Not creosoted broke with	Creosoted broke with	Creosoted. Gain.
Memel fir	11 cwt.	11¼ cwt.	¼ cwt.
Scotch fir	13¾ ,,	15¼ ,,	1½ ,,

In each of the above cases the breaking-weights are the averages of six tests. It should be remembered that while creosoted timber is impervious to wet, it is not so to the sun's rays. A creosoted piece of timber will always show on which side the sun shines. The oil is, by solar influence, brought to the surface of the wood, some of it evaporates, whilst more trickles down the timber; for this reason timber, although creosoted, should occasionally be paid over with a coat of tar. The writer acknowledged his indebtedness to Messrs. Bethell, and to Messrs. Armstrong & Foster, for much valuable information they had given them.

Flitch, Sandwich, or Salmon Beams.—In calculating composite girders of wood and iron, we must arrange that the different materials shall act in concert with each other. To this end the late Sir William Fairbairn, E. W. Tarn, and others, have experimented; but these authorities do not all agree as to the proportion the iron should bear to the wood. With Fairbairn, this kind of beam does not appear to have found much favour, for he describes it as being "composed of a plate between two pieces of timber, depending, probably, more upon these adjuncts than any amount of strength likely to be obtained from the centre plate, which, in such a position and in such a form, could not be considered as a beam." Cast-iron flitches have been used, but are now quite discontinued.

In Fairbairn's beam the proportion of iron plate to wood is 1.32nd; in experimental beams tried at Woolwich Arsenal, it was 1.12th; Tarn's proportion is 1.20th. The experimental flitch beams tried at Woolwich Arsenal will be found fully detailed in the *Builder* for June 9th, 1866, and I beg to refer those interested in this mode of constructing beams to the number for that date. It will be found that the formulæ given by Hurst's "Surveyor's Pocket-book" and these experiments do not agree, which in any new edition it would be well to revise. It has been suggested that the sides of the flitch plate should be roughed so as to have a surface like the teeth of a very coarse file, so as to increase its adhesion to the wood.

Timber Columns or Posts.—I noticed during the construction of Blackfriars Bridge that two whole baulks of timber were tested as to their compressive resistance, with the following results:—

	Length. Feet.	Size. Feet.	Crippled with, per foot. Tons.		Reduction in length.
Red	20	13×13	138	or 112	¼ in.
White	20	13×13	147	or 126	¼ in.

HINTS FROM AMERICAN PRACTICE.*

A WRITER in the *Times* a few years back remarked on the cosmopolitan character which attaches to some professions as compared with others that are of necessity more localised. As instances of the latter, he adduced the law, which, however brilliant may be the prospects it holds out to successful votaries, has its fields for exertion limited by the differing systems of jurisprudence which prevail in different countries. A Dublin barrister or solicitor, if obliged to transfer his sphere of practice to New York, or even to Quebec or Melbourne, would find a large part of his knowledge and experience of little use. Not so, however, with a physician or surgeon, whose knowledge of the human frame and its ailments would be of equal service in any part of the world. These latter professions accordingly are classed as cosmopolitan, and in the same category the writer above mentioned reckons our own and the kindred one of the engineer. As the laws of matter and motion, and the principles of taste, are the same all over the world, the architect or engineer, provided he be originally possessed of adequate capacity, will be in no way disconcerted by having a new field of practice open before him, but having devoted a brief space to acquire a knowledge of the local materials, will find his own training and experience of the fullest value in enabling him to utilise them. Differing requirements of climate and custom, so far from being obstacles in the way of a competent architect, will rather suggest to him new modes of construction and forms of design, and make it less difficult for him to achieve something novel, than where the conditions to be observed are unvarying; and it is hard if the practice of architects who have thus laboured to transplant European architecture to the soil of other continents does not suggest to them at least some few ideas which might with advantage be engrafted on home practice also. It is the consideration of some such, suggested to the writer during nearly three years' residence and practice in the United States, that your attention is invited this evening.

In a former paper on American architecture, I referred to the fact that American town houses formed by far the most satisfactory class of buildings to be seen on that continent. The conditions of social life which prevail there have led to their development to a greater extent than is now usual in most of our cities, and may be compared in their results to those which at one period of our history caused Dublin to be filled with stately town mansions, now, alas! deserted by their lordly occupants, and relegated to the uses of schools, warehouses, charitable institutions, and government offices. The town houses of the American cities are nearly on the same scale as these once aristocratic mansions of ours, but are finished and fitted up with a modern completeness fairly commensurate with the general advance in the industrial arts which the world has made in the interim. One of the most noticeable features about them (which applies also to other classes of building) is the completeness of their systems of heating. This has doubtless been enforced by the rigour of the climate in winter, and necessity has proved here, as in so many other instances, "the mother of invention." Compared with the imperfect and wasteful manner in which our houses and public buildings are warmed, one is led to the conclusion that the mildness of our winter has allowed us to fall into utter supineness and neglect on the subject. And yet we have plenty of cold, and, what is worse, damp weather here to make it important for us to attend to it. What can be more preposterous than to find the halls, staircases, passages, and often the bedrooms of a house or hotel destitute of any provision for warming them, and consequently filled with as cold and damp an atmosphere as prevails outside, while a few of the living-rooms are warmed by open fireplaces only, which just give a comfortable seat or two in their immediate vicinity,—the traditional "chimney-corner,"—and which are certain to draw powerful currents of cold air towards them whenever the doors are opened? The effect of this defective system, or rather want of system, is seen in our internal domestic architecture, which is cramped or confined as compared with either American or continental European. Our doors are miserably small, and have to be placed in lop-sided positions, with a total disregard of symmetry. Draughts have to be guarded against by frequent cross doorways, and the most careful adjustment given to the relative positions even of articles of furniture in the rooms, as may be seen by the planning in Professor Kerr's "Gentleman's House," simply to make what was originally bad tolerable.

Now, in the American houses and hotels, the moment one crosses the threshold he enters a mild and equable temperature, which pervades every part of the house, and permits the internal doors all through to be left open or shut independently of any considerations of temperature. It also permits of much more spacious and symmetrical doorways being used than with us; and, in fact, one of the most striking features to a British islander on his first arrival, is the superior dimensions and elegance of the doorways, which are generally 9 ft. or 10 ft. high, and 6 ft. or 8 ft. wide, circular-headed, in two leaves, either folding or sliding. The details of the methods by which this equable temperature is maintained vary somewhat, and to discuss them properly would require a volume by itself. Vast advances have been made in them during the last few years, so as to obviate most of the objections which have caused so much prejudice to exist amongst us against any other system of heating but the open fireplace. For example, some years back the use of stoves (somewhat like those we see still on the continent of Europe) in American houses was very general, the dry sulphurous heat evolved by them was very disagreeable, and they were denounced by Mr. Anthony Trollope and other English travellers as being the chief and, as he calls them, "accursed" means of destroying the complexions of the American ladies. Be that as it may, such stoves are no longer to be seen in well-appointed American houses, which are now heated by a hot-air apparatus either on the basement, or more commonly in the "sub-cellar," communicating by means of flues with openings into each important room, or else by steam; not so often by hot water. In fact, steam heating seems to have been brought to greater perfection there than anywhere else I know of, and as it admits of much smaller pipes being used than with water, and does not take so long to circulate, it possesses great advantages, and is well worthy of further attention at this side. The chief volume of heated air is arranged to be thrown into the halls and passages (the coldest parts with us), and in order to its diffusion to any rooms which may not have special connexion with the apparatus, such as smaller bedrooms and closets, fanlights moving on hinges are placed over all the doorways—an arrangement equally serviceable for diffusion of light as well as air. The upper panels of doors are also very often of ground plate-glass, in ornamental patterns, which is not only very elegant in appearance, but secures that the corridors and passages enjoy much better light than they would otherwise have. The halls, stairs, and passages are handsomely furnished and carpeted, and are generally quite as agreeable lounging-places as the sitting-rooms, to which they are thrown open by the large folding-doors already referred to, to a much greater extent than prevails with us. A comparison of the plans of some American houses, and an inspection of some of the details of internal doorways, will show the operation of these causes. Under a mode of heating by open fireplaces only, such plans and details would be inadmissible; but when once a proper system of general warming is applied, the architect is at liberty to deal with his internal plan and details in a much more symmetrical and spacious manner than before. It will be observed also that the open fireplace is still retained in the principal rooms; nor do I by any means advocate its discontinuance. I regard it, however, as a useful supplement to a more comprehensive system of heating which ought to be contrived for every well-planned dwelling-house or public building. And no such system should

* By Mr. William Fogerty, F.R.I.B.A. Read at the ordinary general meeting of the Architectural Association of Ireland, January 27th, 1876.

be adopted without at the same time arranging for a complete system of ventilation.

The next point to which I shall advert is the extent to which plumbing and engineering are applied to buildings, and especially dwelling-houses, so as to obviate the necessity for a large number of servants, and the use of detached pieces of crockery ware in the bed and dressing rooms. To this, too, the Americans have been led by the difficulty of procuring competent domestic servants. This is, indeed, the great trouble of American housekeepers, and drives so many respectable people to live in hotels and boarding-houses rather than their own homes; but, besides this, it renders it important that houses shall be contrived so as to require the least possible number of servants to attend to them. And I am not clear but that we are coming to a similar set of conditions here. The cost of domestic service has largely advanced with us during the last few years, and still the complaint of householders is that really good servants are hard to be obtained at any price. In the meantime, great advances have been made both with us and the Americans in the mechanical arts, in plumbing and engineering especially, and all our great cities are now blessed with abundant supplies of water; so why should we not advance with the times, and cease to entail upon our housemaids the necessity of carrying water, and filling and emptying ewers and basins by hand, which can all be accomplished almost instantaneously by a few simple and well-understood arrangements?

In every well-appointed American house each bedroom or dressing-room has a fixed basin-stand (and often a bath) provided, to which hot and cold water is constantly laid on. Besides the constant saving of service effected by this, there is a great saving of time and increase of comfort, and the supply is much more plentiful than when it has to be brought up by hand. There is also a great saving in furniture, and I venture to say the cost of detached basin-stands and crockery-ware all through a house would go a long way to defray the expense of fixed appliances such as the Americans use. The completeness and elegance with which they are fitted up leaves nothing to be desired, and the regularity with which they work, even through the hard frosts which prevail there, prove conclusively the high degree of perfection to which they have developed the plumber's art, and should encourage us in the endeavour to introduce such an obvious and desirable improvement here.

While referring to furniture, I am led to notice another particular in which American houses furnish us with a useful hint, namely, that a large number of things which with us form separate and cumbrous pieces of furniture, costly in themselves, difficult of removal, and often impossible to arrange comfortably in a room, are with them planned and built with and into the house. Of this class especially are bookcases, sideboards, mirrors, presses and wardrobes, plate-chests, and ice-boxes or refrigerators, which, when thus contrived, can be fitted into numerous spaces, otherwise likely to be wasted, and can be also, and are in America, designed and executed in harmony with the general finish of the interior of the house. Now surely this arrangement is well worthy of imitation. What can be more absurd than, when once the architect has issued his final certificate and the builder has departed, to see huge vans disgorging loads of heavy articles of furniture at the door of a new house, often utterly out of character with its architectural style, and often also impossible to be fitted into the rooms without blocking up doors and windows, while numberless tidy recesses remain in the mansion blank and bare, which, by a little judgment and forethought, might be handsomely and neatly fitted up so as to dispense with the necessity of heaving in these huge and unwieldy masses? I believe true economy in this case, as in the last, is decidedly in favour of the American practice, and the possibilities of artistic effect and completeness even more strongly so. Great variety and symmetry can be given to the forms of rooms by the judicious planning of such things as I refer to, which, as they will be required sooner or later, might as well be designed and arranged by the architect, and executed under his direction, as ordered from some cabinet-maker independent of him, and often totally at variance with the character of his building.

I might include, amongst the mechanical appliances which the Americans have brought into use with much skill and effect in their town houses, lifts or elevators for dishes and luggage. Every well-appointed house in New York has one or more of these, from the kitchen to the serving-room as a matter of course, and also from the basement or entrance-hall to the attic for luggage. These, as well as the plumbing work already referred to, having become general, have been gradually improved so as to approach as near as possible to perfection in their operation. The same may be said of passenger elevators, which are in extensive use in all the American cities, and with which, of course, we have some practical acquaintance here; but it must be admitted that ours are not to be compared to those in use in America, either in the extent to which they are applied, or in the simplicity and smoothness of their working.

Another noteworthy instance in which the Americans have brought both mechanical skill and artistic taste to bear on domestic architecture, has reference to the style of their hinges and other door furniture. The forms of these customary with us, and the manner in which they are applied, are both essentially commonplace and unartistic. What can be more disagreeably matter-of-fact than an ordinary butt-hinge, except, indeed, the transparent fiction usually attempted by the house-painter, who generally tries to paint or grain it over as if it was part of the woodwork of the door? Whenever a door or pair of doors is wanted to fold right round, there seems to be no better means of accomplishing this result than by using double width butt-hinges, projecting in all their hideous nakedness beyond the architraves. Since the revival of Gothic architecture there has been, to be sure, some attempt to introduce an artistic element into hinge-work, though even here it is too often confined to planting on sham branches, the butt-hinge keeping its own place; but in our Classic architecture the subject remains untouched. Now compare this state of things with the forms of hinges illustrated in American books, intended for and used in ordinary house-work, and bear in mind the fact that these are usually silver-plated, and kept brightly burnished, and you will agree with me, I think, that in this particular the Americans are, as they put it themselves, decidedly "ahead of us." The effect of these hinges shining on the dark polished walnut in general use for the doors and architraves is very fine, reminding one very much of jewelry on a lady's silk dress. As I understand the American manufacturers are now turning out hardware at prices such as to compete fairly with Birmingham or Sheffield, and certainly the forms of their hinges and other door furniture are far superior to anything to be had from those places, I think it would be worth while for some of our enterprising hardware merchants here to open communication with some of them, and let us have the opportunity of trying their work on some of our buildings.

The finish of the stairs in American buildings is much more elaborate and artistic than is usual with us; and here, too, we may derive some useful hints. Look for a moment at the ordinary finish of the stairs with us. Sir Gilbert Scott, in his work on "Gothic Architecture, Secular and Domestic," thus describes it:—"An ordinary staircase such as people are in the habit of dubbing 'handsome' without thinking it so, is after all a very dull thing: your neat steps with moulded nosings—with neat cast-iron or bronze balusters and French-polished mahogany rail screwed round like a *cornu-ammonis* at the foot, is an excellent thing in its way, and far be it from me to say a word against so time-honoured a contrivance. Let us speak well of the bridge which carries us safe over the stream, and on the same principle think gratefully of the staircase which conducts us so pleasantly to the drawing-room. All I have to say against it is, that with all its practical good qualities, there is a sleepy, self-satisfied look about it which no one would like to disturb." . . . "It does its duty so well, and so neatly and unobtrusively, that it is really a shame to find fault with it; all I ask is to give it a fillip just to make it brush up and look more lively." He then proceeds to advise how Gothic, and especially Elizabethan, architecture affords opportunities for improving on this type by the use of a "bold moulded string carved—the stately newels surmounted possibly by figures—the massive rail moulded to fit well to the hand—the balustrade formed either of individual balusters, arcading, tracery, or of continuous open scroll-work"; also "by the introduction of inlaid woods, a mode of enrichment too much overlooked in our Gothic works."

Now all these valuable ideas have been apparently well known to and acted on by the Americans for a long time past, and that, too, without departing from the spirit of Classic or Renaissance architecture, which as yet is their favourite. The stairs in American houses are really beautiful and elaborate pieces of work, usually entrusted to a specialist in that line called a "stair-builder," who apparently has far distanced his progenitor the "staircase hand" amongst ourselves.

The external doorways, especially of the town houses, next demand notice, as they form very imposing and attractive features in American houses, while so miserably bald and uninviting with us. I am inclined to think the architects or builders who erected the many stately aristocratic mansions of the past age in Dublin, already referred to, had much better ideas on that subject than those which have since become prevalent. At least, if we look about for a dignified and effective doorway, we are far more likely to hit on one of them than on one of our newest productions. There are bold and effective doorways to Powerscourt House (now Messrs. Ferrier & Pollock's), Charleville House (now the Roman Catholic University), and Avonmore House (now the United Service Club), also to many other old mansions; but the builders of more recent town houses seem to have had no better idea of a principal entrance-door than a plain semi-circular or semi-elliptical arched opening. The American town houses, small and great, have nearly always handsome doorways, with more or less of architectural character, and of spacious dimensions, the outer door in two folds, opening at right angles to the front, and forming a most useful and inviting recessed porch, with a pair of inner glazed doors within. The panelling and mouldings are really elegant and varied, instead of the regular old four-panel or six-panel that we ought to be sick of by this time, and the material commonly oak, walnut, or other ornamental hard wood. I am aware that a prejudice exists here against anything like style in a hall-door, as looking too much like a hotel or club-house, just like what once existed against plate glass, but it is one which deserves to be discountenanced. There is certainly much room for improvement; but the scarcity of oak or other hard wood with us makes it unlikely that we shall ever rival the Americans in this particular. It is doubtful, however, whether our damp climate is not adverse to the use of any unpainted wood in such a position,—at least, any instances where oak or mahogany have been used for external doors in Dublin are far less satisfactory than where painted or grained deal was used,—a remarkable instance in which the imitation is more lasting than the reality.

There is another very common feature in American Domestic architecture, more frequent, however, in the country and suburbs than in the towns, which at first sight might seem deserving of adoption here,—namely, the verandah. This is extensively adopted as affording a cool and airy place of retreat from the sun; and although we are not generally favoured in this latitude with a superabundance of the rays of that luminary, similar places of shelter might seem to be desirable as protecting from rain, which is so frequent with us. I believe, however, experience is against the general adoption of such adjuncts here, unless to a very limited extent. If we could only be sure that the rain would always come down vertically, they would be of some value; but, as unfortunately, it is so addicted to driving in nearly a horizontal direction, and sometimes assumes the form of a drizzling mist which apparently defies the ordinary laws of gravitation, an open verandah presents a very uncomfortable place of shelter. I have seldom known them added to houses in this country without sooner or later having to be glazed in. I think, therefore, this feature, however pleasant and attractive it appears in American country-houses, is one to the extensive adoption of which the climate of this country is decidedly unfavourable.

The planning of American town houses is deserving of some attention, as rather different from our regular types, and presents some advantages. That form known as the "high stoop" has many elements in common with that of the terraces of middle-class houses in our own suburbs, both having high flights of steps to the hall-door, with a basement nearly level with the street. I think, however, the Americans have developed and improved this plan considerably. The hall and staircase, it will be observed, are thrown into one, and the latter arranged to ascend in one flight for each story; also much greater depth from front to rear given than in our

houses,—the middle space being devoted to hall and dressing-rooms, lighted by a large skylight over the stairs, also by the extensive use of glazed panels and fanlights. Possibly such a disposition would be deficient in light with us; but, either from the superior brilliancy of their sunshine, or the effect of the other arrangements above described, it rarely seemed deficient in that respect there. One important advantage of the plan is, that it brings the kitchen and dining or breakfast rooms into very convenient proximity, and enables the business of the house to be performed with a minimum of servants.

There are two peculiarities of American architecture which can scarcely be passed over in a paper of this kind, but which, however successful they may be in that country, are not likely to be so here. I refer to the extensive use of wood in country houses, and of cast-iron in warehouses and shop-fronts. Both these materials would be so costly here as to present no advantage, and the type of design which has developed from their use in America is not likely to find favour with us. It should be noted, however, that, particularly in the use of cast-iron, the Americans have attained to a high degree of skill, and that I fear it would be a long time before our ironfounders could undertake the production of architectural forms with anything like the beauty and accuracy of their work.

American church architecture, I regret to say, furnishes but few hints to the European architect, unless it be to point out to him "what to avoid." Their most recent churches may be divided generally into three classes:—

(*a*) Direct imitations or reproductions of English Mediæval churches, seldom correct, however, either in plan or detail.

(*b*) Tabernacles or meeting-houses without any architectural pretension, but often well contrived and arranged for seeing and hearing.

(*c*) Attempts to combine these two discordant ideas, resulting commonly in all manner of shams and devices, to make what is a tabernacle within look like a Gothic cathedral without.

Of these three I need hardly say I consider the unadorned tabernacle by far the best, as having at least the merit of answering its purpose honestly. The last idea I look upon as the worst of all, but it is decidedly the most in fashion just now, most of the new and costly churches of New York being built in accordance with it, and, of course, lauded to the skies by the newspapers as noble structures, combining all the dignity and grandeur of the old world with the life and progress of the new. Imagine interiors like Spurgeon's Tabernacle, the Gaiety Theatre, or the Merrion Hall clothed in exteriors somewhat resembling Westminster Abbey or St. Patrick's, and you will form some idea of the effect.

There is, perhaps, one respect in which the arrangements of American churches are deserving of commendation, and that is in the comfortable manner in which they are furnished and fitted up. This is surely deserving of notice here, as whatever of comfort we may enjoy in our own homes, there is but little in our places of worship. The American churches are nearly always handsomely and uniformly carpeted and upholstered, not according to the individual means or fancy of the pewholders, as with us. Why the committees of our churches should not have proper and uniform upholstery provided in our churches as well as they provide the seats themselves, I cannot understand. As it is, how absurd to see one pew or seat handsomely cushioned and carpeted, the next bare, and the next again half-and-half! Now that we are come to the voluntary system,—which, I need hardly say, is universal in America,—and that every person pays for his church accommodation just as he pays for any other good thing, it is worth while for those who have the care of our churches to see that they are made a little more comfortable and attractive, without presenting such ugly contrasts as those just alluded to. The same observation applies to some extent to the theatres, which in America are furnished and fitted up in a manner to put us to shame. When we shall see any improvement in that respect cannot be predicted, but I fear the date is very far off.

I trust that these few hints derived from American practice may not be deemed unworthy of attention.

Proposed Town and Market Hall for Rugeley.—The Rugeley Local Board has decided to build a new town and market hall at an estimated cost of 6,000*l*.

THE COVENTRY SEWAGE WORKS.

THE Coventry Sewage Works, of which a ground plan and perspective view are annexed, were commenced in the month of May, 1873. Although they were placed in operation on the 30th April, 1874, and have been kept continuously so ever since, they have only just now reached a final state of completion. The sewage of Coventry having thus been disposed of during the last twenty-two months, a good practical test of the value of the undertaking, in assisting to solve the great sewage difficulty, has been afforded.

Before proceeding to describe the works, it may be as well to say something about the sewage itself. Coventry contains a population of 40,000; it is a well-sewered town, with a good water supply; but the character of the sewage is extremely foul,—as polluting, perhaps, as any town sewage to be met with in the kingdom; it receives the fæcal matter, &c., from upwards of 4,000 water-closets, but its foulness is principally due to the large quantities of refuse liquid, &c., which are discharged from various dye and varnish works existing in the town of Coventry. This manufacturing refuse, mixed with the sewage, renders it of a character not only most offensive, but extremely difficult and costly to defecate. The dry-weather flow amounts to an average of two million gallons during twenty-four hours, but it is generally in excess of this. Previously to the construction of these works, the whole of this sewage was, in an undefecated state, cast into the river Sherburne, at a spot situated about a mile from the town. It rendered this stream so black and disgusting as to become not only a terrible nuisance in the neighbourhood, but a source of great danger to the public health as well, the sewage eventually finding its way, at some few miles' distance, into the source of the water supply to the town of Warwick. All this has now been remedied, the stream has been purified so that fishes have returned to its waters, and the Corporation of Coventry been relieved from further litigation and annoyance about its sewage.

The following account of the operations will explain the works and the various processes by which this has been accomplished.

Advantage has been taken in selecting the site of a small fall (about 6 ft.) in the nature of the ground to avoid the costly expense of pumping the sewage; it is therefore worked throughout by gravitation. A narrow strip of comparatively valueless land along the border of the Sherburne, in extent about thirteen acres, has been thoroughly drained, and embanked against the rising of the river during floods, and made available for the whole of the works; a smaller quantity of land would have sufficed, but as this quantity was available it has been employed.

The sewage is subjected to four processes, as follow:—I. Straining; II. Chemical precipitation; III. Filtering the effluent water; IV. Drying the precipitate.

The straining is effected by means of mechanical strainers known as Latham's solid sewage extractors. The solids thus removed form a rich and valuable manure, which, at the present time, at the Coventry works, is made use of in the orchard adjacent to the buildings.

The strained sewage, thus free from all its grosser contents, and therefore in a better condition for chemical treatment, next passes through a block of buildings where it receives continuously an addition of a solution of sulphate of alumina (manufactured and prepared in a cheap way on the works, which contain all the necessary appliances for this purpose). The sewage next receives a small addition of milk of lime, and after the addition of each chemical the whole mixture is thoroughly agitated. The mixture then passes on to the precipitating tanks, of which there are four, three being in use at the same time, while the fourth is being cleaned out, one tank being cleaned out each day if practicable. Precipitation takes place in these tanks, while the effluent water flows in a thin sheet, from the surface, first over weirs extending quite across the tanks; and secondly over weirs which extend only half way across each tank. An arrangement of sluices and valves exists at the end of each tank for draining off the water from the precipitate when a tank has to be emptied.

The effluent water is conveyed by a culvert and open carriers to the filter-beds; of these there are three, each being three acres in extent; the water percolates through a depth of 5 ft. of earth, and is then discharged, through three 15-in. mains, into the river. This water is clear, bright, of a good standard of purity, and, according to an analysis of it made by Professor Voelcker, contains in each imperial gallon 45·22 grains of solid matter, and only ·630 of a grain of free (saline) ammonia, and ·042 of a grain of organic (albuminoid) ammonia.

The filter-beds are used intermittently, and are cropped with rye grass. The crop is pleasing to the eye, and assists in keeping the beds in good condition; but the produce, resembling ordinary sewage-grown vegetation, is coarse and almost valueless.

The sludge, or deposit, found on the bottoms of the precipitating tanks after the water is drained off, amounts to about 25 tons (containing 85 per cent. of moisture) in twenty-four hours, and, as scarcely any solid matter is allowed to enter with the chemicals, almost the whole of this is derived from the sewage. This quantity is capable of being reduced, when quite dry, to about 4½ tons. The sludge is swept from the bottoms of the tanks into underground chambers, placed below the tanks, in which simple arrangements exist for drawing off supernatant water; it is then elevated by ordinary chain and bucket elevators, and passed through Milburn's continuous sludge-filters, by which process a further considerable quantity of water is removed from it. The sludge in this comparatively stiff condition is then dealt with by various ways: some of it is subjected to heat, by passing it through Milburn's sludge-drying machines, and by this means, the remaining moisture being driven off, is converted into a dry manure. This manure, by an analysis of it made by Professor Voelcker, contains, in addition to other fertilising agents, 1·67 per cent. of ammonia, and 3·75 per cent. of phosphate of lime, and may be valued, according to chemical values, at about 35s. per ton. Some of the sludge is dried, and at the same time fortified by the addition of chemicals and fertilising agents, and thus furnishes a good manure which is brought up to any required value, and competes well with the best artificial manures produced in this country. Much of the sludge is, however, in its natural stiff and semi-dry state, bought and carted away by the farmers in the neighbourhood of the works.

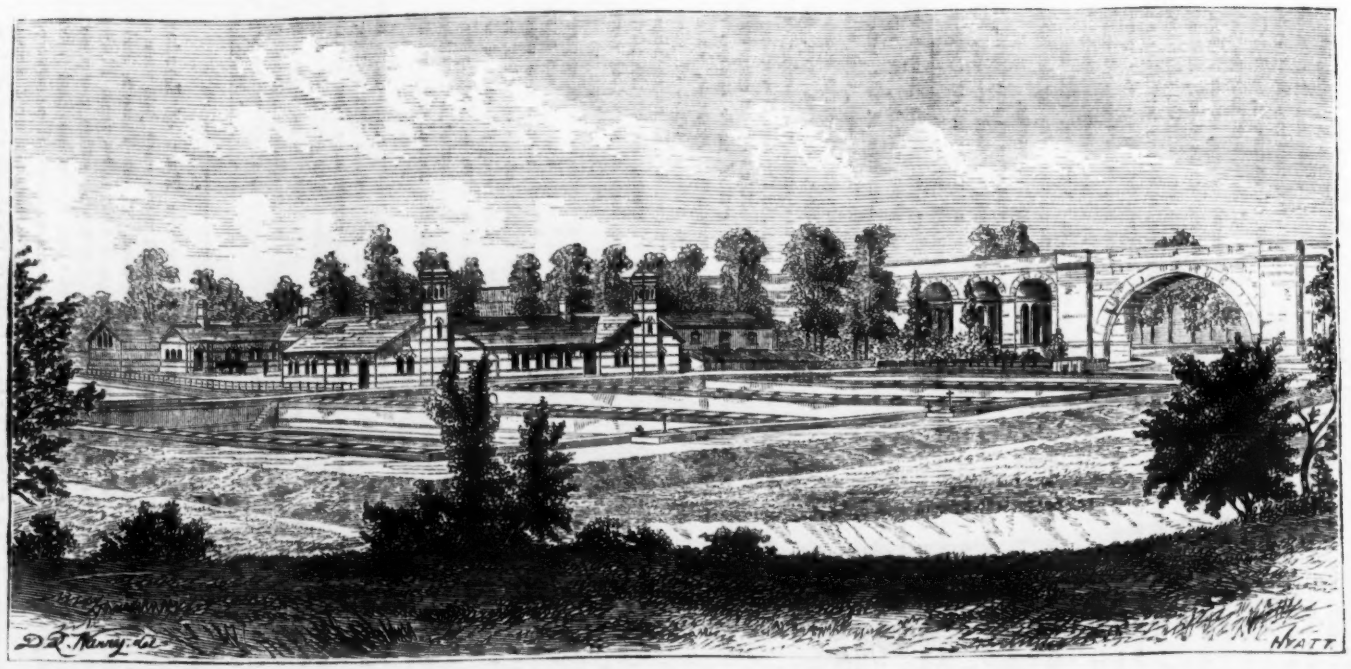
The sale of sewage manures in any form, however, must be a slow and gradual process. They will not find a sale immediately, but there is no reason why they should not do so in time.

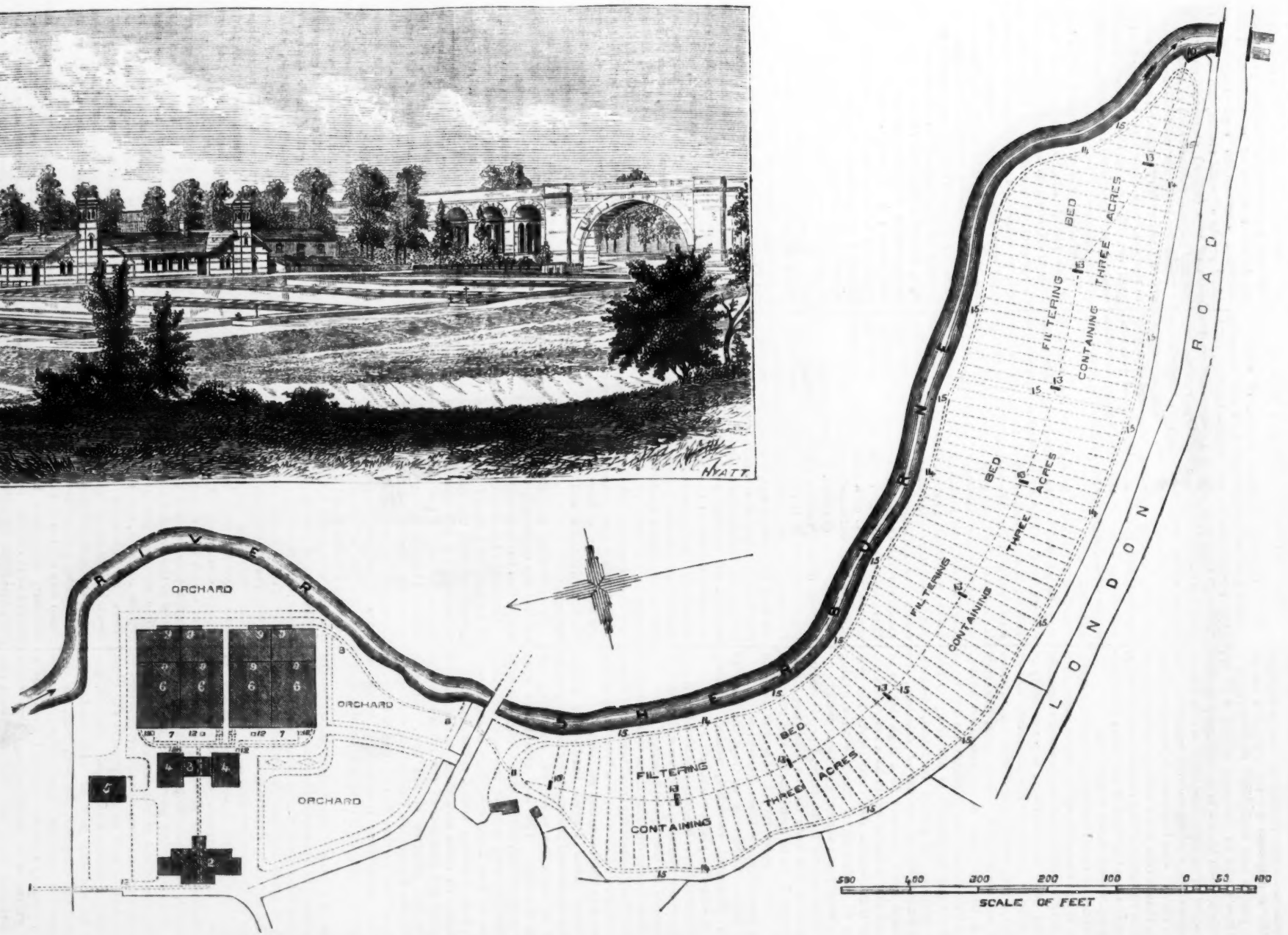
It might, even after the works have been in operation for twenty-two months, be apt to mislead, if detailed accounts of the working expenses were given; for this reason, that, almost daily, practical experience supports some opportunity for economising. In this way, since the works were put in operation, a saving or reduction of 30 per cent. in the cost of working has been effected; but, in order to show corporations that they might get out of their sewage difficulties without a very heavy expense, when the benefit received in a sanitary point of view is taken into consideration, it will be sufficient to say that the cost of chemicals for the purification of one million gallons of very foul sewage, as at Coventry, is about 30s.; that the work could be carried on independently of any return from sale of manure for an annual rate not exceeding 8d. in the pound; that if the whole of the manure found a sale at its chemical value, the return would nearly repay the cost of working; and that, if the plan of fortifying the manure were generally adopted, a considerable profit over and above the cost of working would result.

Corporations and sanitary authorities must, however, bear in mind that, in this matter, the question of national importance now is, not so much how to turn sewage to profitable account, as how to prevent it from being injurious to health, the latter being an affair of necessity, the former being desirable, but it cannot be put in the first rank.

J. C. MELLISS.

New Docks for the Port of London.—Some extensive dock works have just been commenced on the banks of the Thames, and will extend a distance of four miles from Blackwall to Barking. These works, which comprise the extension of the St. Katharine and Victoria Docks, and the creation of extensive new shipping accommodation, have been rendered necessary by the increase of the shipping trade of London. The works just commenced will extend over a period of three years, and furnish employment to between 2,000 and 3,000 hands, chiefly excavators or navvies.

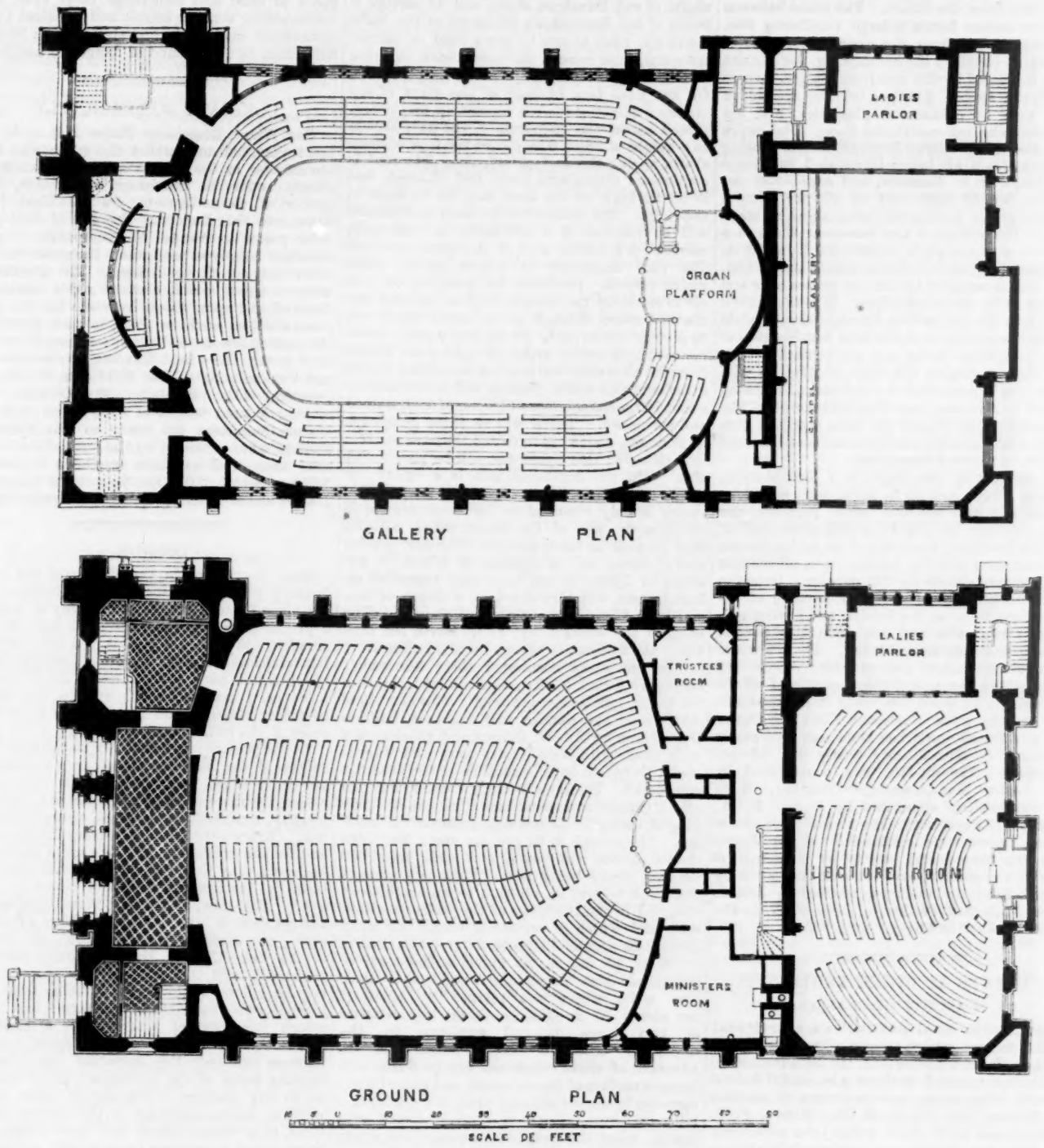




1. Main outfall sewer from Coventry.
2. Chemical works, containing Latham's solid sewage extractors, shale and chemical sheds, chemical vats, stirring or agitating well, mixing-room for chemicals, kilns, mill, 10-horse power engine, boiler for chemical purposes, and coal-sheds.
3. Lime works, containing stirring or agitating well, lime-store, lime-vats, and 10-horse power engine.
4. Drying and filtering rooms for sludge, containing Milburn's patent sludge-filters and sludge-drying machines.
5. Manure-store, containing 6-horse power portable steam engine, and mill for pulverising manure.
6. Precipitating tanks.
7. Underground sludge-chambers.
8. Effluent water culvert.
9. Weirs.
10. Outfall of filtered effluent water to river.
11. Outlet for effluent water to filter-beds.
12. Man-holes.
13. Ventilating-shafts and man-holes.
14. Carriers for effluent water.
15. Embankments.

THE COVENTRY SEWAGE WORKS.—Mr. J. C. Melliss, Engineer.

DR. HALL'S NEW PRESBYTERIAN CHURCH, NEW YORK, U.S.——MR. CARL PFEIFFER, ARCHITECT.



NEW PRESBYTERIAN CHURCH, NEW YORK.—*Plans.*

DR. HALL'S NEW PRESBYTERIAN CHURCH, NEW YORK.

THIS church, which we illustrate in our present number, is situated at the north-west corner of Fifty-fifth-street and Fifth-avenue, in New York, having a frontage of 200 ft. to the former and 100 ft. to the latter. The frontage to Fifth-avenue is flanked by two towers; that at the south-east angle being 30 ft. square at its base, and rising with a spire to a height of 300 ft.; and that at the north-east angle being 160 ft. high. The main entrances, consisting of four double doorways, are situated between these two towers, and are approached through a porch or narthex, 40 ft. front, with stone steps leading from the courtyard on Fifth-avenue.

In addition to these main entrances there is an entrance in the north-east tower on Fifth-avenue, also one in the main tower, at the corner of Fifty-fifth-street and Fifth-avenue, and three entrances, all double doorways, in Fifty-fifth-street, at the westerly end of the church, which also gives access to the lecture and Sunday-school rooms. There are thus very efficient means, both of ingress and egress, for the accommodation of a large congregation.

The front on Fifty-fifth-street has a tower at the westerly extremity, 106 ft. high. There is also a tower at the north-west extremity of the church, 100 ft. high, which acts as an air-shaft to supply the church with fresh air, which is taken at the top of this tower in order to have it pure and free from dust.

The principal entrances, on Fifth-avenue, lead into a vestibule, 45 ft. 7 in. by 16 ft. 6 in., the ceiling of which is formed of groined arches, enriched with moulded ribs, foliated bosses, &c., and supported upon columns with sculptured caps. The floor of this vestibule and those of the two towers are paved with tiles. The main floor of the auditorium is 85 ft. wide by 100 ft. deep; upon the gallery the auditorium is 136 ft. deep, total sitting-room being provided for 2,000 people. The ceiling is 60 ft. high. It is claimed that special attention has throughout been given to the acoustic properties of the building.

The style of the exterior is Early English, but the interior is more modern. The pews are arranged in concentric curves, all placed so as to command a direct view of the minister. The pulpit is large and of rich design; the centre panel is sculptured with an allegorical representation of the four Evangelists and the Holy Communion. Over the pulpit is an ornamental canopy, and above this the gallery for the precentor, choir, and large organ. With the exception of light iron columns to support the galleries, there are no pillars to obstruct the view. The ceiling is formed on three curves, rounded at each end to conform to the curves of the walls, and entirely constructed of wood, finished with panels, moulded groining-ribs, and corbels. The lighting is effected through twenty-four traceried windows over, and twenty-four smaller under the galleries, and traceried windows at the east end.

In addition to this, the entire upper cove of the ceiling, 30 ft. by 75 ft. deep, is filled in with stained glass, and lighted from the roof by sky-lights. All the windows have double sashes, an inner and an outer one, with the double object of securing complete immunity from external sounds, and of lighting the church in the evening by means of gas-lights placed between the

two sashes, illuminating the stained glass so as to be seen from the inside. The space between the two sashes forms a large ventilating flue, drawing the air from the church by means of perforated panels in the wainscoting, the current being increased by the heat from the gas-burners within the space. The gas-burners are hidden from view by ornamental glasswork, and are provided with self-ventilating flues. The entire basement of the church forms an air and heating chamber, fresh air being introduced by a large iron fan, 7 ft. in diameter, and capable of delivering 30,000 cubic feet of air per minute, situated in the north-west tower above referred to. At the ceiling of the basement there is a network of steam-pipes, in all 9,000 ft., and 3 in. in diameter. Thus, before entering the auditorium, the pure air supplied by the fan passes over and is warmed by the steam-pipes. It is then introduced into the auditorium through movable slats inserted in the risers of the fixed foot-benches of every pew, there being one slat to each sitting, which the occupant can open or shut at will. The steam is generated in two boilers, 16 ft. long by 4 ft. in diameter, each fifty-horse power. The basement of the church has been carefully concreted, and a smooth hard floor made of Portland cement, to prevent dampness.

In the rear of the chapel is a lecture-room, 75 ft. by 45 ft., and 25 ft. high, with a gallery on one side, and spacious ladies' parlours, one above another, on the Fifty-fifth-street end of the lecture-room, so arranged as to be thrown into connexion with the lecture-room, affording a total accommodation for 700 persons. Over the lecture-room is the Sunday schoolroom, of the same dimensions as the former, and having galleries at two sides and one end; also several large class-rooms and a library. There are also commodious trustees' and ministers' rooms. The pews, gallery fronts, and organ-case, and all the internal joinery work, are made of polished ash, and are the work of Messrs. Kimble & Cabus. The sculptured work has been executed partly by Ellin & Kitzen, and partly by Edward Plassman. The air-fan was constructed by the Nason Manufacturing Company, N.Y., and the heating apparatus by Pitken & Co., Hartford, Connecticut. The masonry and stonecutters' work were contracted for by James Stewart; carpenters' work, by Jennings & Brown; the painting and internal decoration by John H. Molir; and the organ was built by Jardine & Son. Mr. Carl Pfeiffer, of New York, is the architect of the building.

CHURCHES AT STOKE NEWINGTON.

VISIT OF ARCHITECTURAL ASSOCIATION.

The Architectural Association's second visit for the present session to works in progress was made on Saturday afternoon, the 12th inst. The members assembled at three p.m. at All Saints' Church, Aden-grove, now in course of erection by Messrs. Hill, Higgs, & Co., Messrs. F. T. Dollman and W. T. Allen being joint architects. Mr. Allen was present, and conducted the visitors over the building, which is far advanced towards completion. The style is Early English, and the church consists on plan of nave, 83 ft. 8 in. long by 35 ft. wide; chancel, 36 ft. long and 35 ft. wide; and north and south aisles, 10 ft. 6½ in. wide. The nave and chancel are divided from the aisles by arcades of six bays, five of which open from the nave and the remaining one from the chancel. The piers of nave arcade, which are square on plan, with chamfered angles, are 2 ft. 3 in. in diameter, and 15 ft. 9 in. from centre to centre. They, together with the voussoirs, are of Box-ground stone, which is the only kind of stone used in the building except the Dumfries red shafts between clearstory windows. The walls are of yellow stocks, relieved internally and externally with bands of red and black. At the west end of the church is a narthex having entrances from the north and south, and opening into the nave by an arcade of three arches. The west end of the nave is lighted above the narthex by three lofty lancet lights, and the east end has three lancets of similar character, in addition to a lancet of the same dimensions, and with cill on the same level, on either side of the east wall in the north and south walls of the chancel. The clearstory is lighted by a group of three lancets over each of the nave arches, the centre lancet in each group being wider and taller than the side-lights. The aisles are lighted by coupled and single lancet-lights in alternate bays, the lights in all cases facing the centre of the arch openings. The clearstory windows are divided by means of detached shafts of red Dumfries stone, and advantage is taken of the diminishing thickness of the walls above the nave arcade to get a kind of narrow triforium, wide enough for convenience in fixing decorations, or laying or altering gaspipes, &c. On the nave face of each of the piers of the arcade a detached shaft is carried up, and is continued across the spandrels of the nave arcade to a height of 28 ft. 6 in.; from the tops of these shafts spring the roof principals. The roof is continuous throughout nave and chancel, and is 50 ft. high to the apex and 58 ft. high to the ridge. The junction of the nave and chancel will be marked by a bell-gable in brickwork, carried by a double arch of the same material. The roof internally is wagon-headed, ceiled under rafters. Provision for carrying off foul air is made by perforated cornices opening into the roof space, through which latter there will be a constant current. Flying buttresses (visible beneath aisle roofs) assist in taking the thrust from the clearstory walls to the buttresses on the exterior of aisle walls. Sittings will be provided for about 760 persons, on open benches of deal, stained and varnished. There will be three gangways or passages, one in the centre of the nave and one in each aisle; these passages will be paved with tiles. On the north-east side is a vestry for clergy and choir, with organ in front; this vestry is only intended to be temporary, as it occupies the site of the tower, which will be built as soon as funds permit. The cost (exclusive of tower) will be upwards of 6,000*l.*, in addition to 1,050*l.* which have been expended on foundations, which go down to a depth of upwards of 25 ft. in some parts of the site. The clerk of the works is Mr. F. W. Davis, Mr. Ross being the foreman in charge for the builders.

The members concluded their afternoon's outing by a visit to the neighbouring Church of St. Faith, Londesborough-road. This church, of which only the eastern half has been built, is from plans by Mr. W. Burges, and consists of a wide nave, with semicircular apse and wagon-roof. Only two bays in addition to the apse are completed. The style is Early French, but the effect, though somewhat heavy, cannot be fairly judged, owing to the incompleteness of the building. The church in its present state has been opened about two years, and seats about 600 persons, chairs being used. There is a passage down the centre, in addition to an ambulatory obtained in the thickness of the walls on either side, and which is continued round the apse. Above this ground-floor ambulatory, at a height of about 15 ft., is an upper ambulatory or triforium, also continuing round the apse. The walls where not pierced by openings are about 10 ft. thick. Each bay consists of two large pointed windows on the upper or triforium stage. Some 5 ft. in advance of these windows, nearly flush with interior surface of the nave wall, and immediately opposite to the division between the windows, a lofty cast-iron column or shaft, relieved with bands, takes the weight of the superincumbent brickwork above the windows, and divides each bay centrally. On the ground level the ambulatory is only lighted by small loops, but each bay opens out into the nave by an arcade of four arches. These have at present a heavy appearance, owing to the capitals being uncarved and in the square.

TORRENS'S ACT AND THE WESTMINSTER BOARD OF WORKS.

The Westminster District Board of Works, in reply to a communication from the Metropolitan Board of Works as to why they have not taken any action under Torrens's Artisans' and Labourers' Dwellings Act, state that their inaction has been caused by the general complexity of the proceedings under that Act, and principally on account of the difficulty of obtaining the certificate of the officer of health that any premises are in a condition or state dangerous to health so as to be unfit for human habitation. In their reply to the Central Board, the Westminster local authorities make a number of suggestions. One of these is, that powers should be given to deal with the large number of houses that it is well known need to be demolished and replaced by other and more suitable dwellings for the working classes, which, although it could not be strictly proved under the existing Act, were nevertheless, in a legal sense, unfit for human habitation. They further suggest that with a view to improve the dwellings of the artisans and labouring classes, power should be given to clear and re-arrange large sites, notwithstanding that the houses and premises to be demolished may not be provably unfit for human habitation on the ground of danger to health.

CONSTANT WATER SUPPLY.

The Water Examiner, Major Bolton, in his last report, informs us that the companies that are moving in the matter and giving constant supply under the provisions of the Act, in a portion of their districts, are the Kent, New River, and East London. The Act of 1871 provides power to compel the companies to give constant supply as and when the public authorities may see fit to demand. The number of miles of street which contain mains constantly charged, and upon which hydrants for fire purposes could at once be fixed, in each district of the metropolis, are as follows:—Kent, 80 miles; New River, 169; East London, 70; Southwark and Vauxhall, 100; West Middlesex, 70; Grand Junction, 41½; Lambeth, 90; Chelsea, 50; making a total length of 670½ miles; and the Water Companies are ready to affix hydrants thereon when required by the authorities. The total number of hydrants erected is at present 2,622, of which 2,077 are for private purposes, 276 for street watering, and 269 for public use.

COLOUR.

Sir,—On reading in the *Builder* of the 1st of January your interesting review of Section I. of Mr. Cave Thomas's "Revised Theory of Light," I procured as soon as possible a copy of that treatise, and shall be glad if you will insert a few additional remarks upon it, the subject being one which I have studied well. At this time, however, I can only touch upon a few of the prefatory remarks, and hope shortly to go on to some of the principal propositions.

In the preface it is most truly stated that "the science of the harmony of colour is a science of our colour sense, founded upon the inner experience, the taste of those who possess a perfectly healthy, a perfectly constituted, optical organisation. Every experiment necessary for the artist, and for the working out of a science of chromatic harmony, may therefore be made with that most beautiful instrument and only *colour-box*, the eye." But, then, in making these experiments, the instrument must be put in motion, or played upon; the sense must be excited; the colours of the box—that is, the sensations—must be produced; and this can only be properly and regularly done by the action of those wonderful luminiferous vibrations of the mysterious ether which (for want of a term more distinct) we commonly call light, using the same term to express not only the sensation, but also the moving cause of the sensation; and if there is to be any science in the matter, there surely must be some knowledge of the different sensations, their resemblances and their differences; some power to produce them at will, and to contemplate them at leisure; some means, and some understanding too of the means, by which they are to be produced. Mr. Cave Thomas, however, adds:—"We shall now proceed to show how every artist has it in his power to determine for himself the true harmonic of any colour without reference to book, diagram, or prism, and quite independently of any of those hybrid hypotheses, half Newtonian, half Huyghenian, which have so long been in vogue." I fear he here undertakes more than he can accomplish, even if we can limit the meaning of "the true harmonic of a colour" to what is commonly called its complementary colour, or in any other conceivable way. But this we shall see as we go on.

But before leaving the preface I must demur to the following observation,—"Our physicists are just beginning to perceive that the adoption either of the *emissive* or of the *undulatory* hypothesis, equally precludes the conception that any variety of light can exist apart from the sentient being, otherwise than as a mechanical impulse, or as a vibration." Just beginning to perceive! Why, the greatest physicist probably that the world has yet seen, Sir Isaac Newton, who may be regarded as the very founder of the science of colour, not only perceived it, but announced it, 200 years ago, in the following words:—"Definition.—The homogeneal light and rays which appear red, or rather make objects appear so, I call rubrific or red-making; those which make objects appear yellow, green, blue, and violet, I call yellow-

making, green-making, blue-making, violet-making, and so of the rest. And if at any time I speak of light and rays as coloured or endued with colours, I would be understood to speak not philosophically and properly, but grossly, and according to such conceptions as vulgar people in seeing all these experiments would be apt to frame. For the rays, to speak properly, are not coloured. In them there is nothing else than a certain power and disposition to stir up a sensation of this or that colour. For as sound, in a bell or musical string or other sounding body, is nothing but a trembling motion, and in the air, nothing but that motion propagated from the object, and in the sensorium is a sense of that motion under the form of sound; so colours in the object are nothing but a disposition to reflect this or that sort of rays more copiously than the rest; in the rays they are nothing but their dispositions to propagate this or that motion into the sensorium; and in the sensorium they are sensations of those motions under the forms of colours."

It may be safely said that no physicist worthy of the name ever from that day to this thought colours to be anything else but sensations. It is reserved to Mr. Colling (in your number for January 29) to prove that colours are something inherent in the object by breaking a brick and showing that the colour of the inside is the same as that of the outside. W. BENSON.

PUBLIC BUILDINGS IN ROME.

THE committee intrusted with the supervision of the new palace to be built in Rome for the Ministry of Finance has communicated to the Italian papers some details concerning this important construction. Each of the two frontages will measure 300 mètres, and the sides 118 mètres. This palace will be built in the higher part of the town, and its foundations vary in depth from twelve to eighteen mètres; a fact which is not encouraging to those who contemplate building on this uncertain soil. The edifice will possess six stories, four porticoes, four large staircases, and eleven secondary or back stairs. It will cover a surface of 19,500 square mètres, and reach a height of 35 mètres. In the centre of the yard a statue will be placed of the celebrated Roman herald, crying *Hic manebimus optime*, which to some may recall Victor Emmanuel saying:—*Ci siamo e ci resteremo!* There will be no fewer than 1,200 rooms within this building, and the number of bricks employed will amount, it is calculated to twenty-five millions. Some 90,000 cubic mètres of that sandy earth peculiar to Italy, and called puzzolana, together with 12,000 cubic mètres of lime and mortar, will help to compose a total of 184,000 cubic mètres of masonry, which is to be varied and relieved by 70,000 *litres* of glass. The number of workmen employed varies from 1,200 to 1,400; but the official report we quote fails to add that three hundred accidents have already occasioned the deaths of from thirty to forty workmen.

ELECTRIC FIRE ALARUM.

THE municipal council of Verviers recently debated on an ingenious method for saving the great factories of the town in the event of fire. A councilman proposed to connect the chief establishments together by means of a subterranean wire communicating with the fire-station. The system would be the same as that applied to railway carriages now extensively employed on the Belgian lines, and which has also been attempted in England. Each house could be provided with one or two electric bells, which it would suffice to touch according to the various signals agreed upon. For instance, a single call would mean that a policeman was required in the house from whence the battery had been set in motion. Two calls would signify that firemen and fire-engines were wanted; while three calls might imply that the street was in a state of riot. But, to prevent false alarms, the bell will be covered by a glass globe, which must be broken before the signal can be given. The inhabitants of Verviers, it is urged, have special reasons to adopt such precautions. The town is situated on the frontiers, and is therefore exposed to the depredations of German thieves, who find comparative immunity from pursuit by returning to their own country when they wish to avoid the Belgian police. As the centre for the manufacture of cloth, in which a great quantity of greasy and inflammable materials are used, fires are most frequent and destructive; while the excessive population of the town increases the possibility of riot. The proposed innovation would not involve any great expense. It is calculated that each householder might be charged 4*l.* for laying down the signal wires in his premises. The money thus obtained would suffice, with perhaps some 80*l.* more to be taken from the town funds.

GASLIGHT MEASURING.

AT the Institution of Civil Engineers, on February 15th, the paper read was "On Estimating the Illuminating Power of Coal Gas," by Mr. William Sugg, C.E. It was generally acknowledged that the most accurate way of estimating the illuminating power of gas was by burning a known quantity of that gas in a standard burner, and comparing the light with that from a known quantity of oil or sperm, consumed in a certain kind of lamp or candle. In England, since the year 1852, the Parliamentary standard of comparison had been a sperm candle, of six to the pound, burning at the rate of 120 grains per hour. But the average normal rate of burning of these candles was nearer 130 grains than 120 grains; therefore it was desirable that the Parliamentary standard rate should be altered if a change could reasonably be made. The greatest obstruction to the adoption of a uniform system of gas photometry had always been the difficulty of settling the kind of burner with which the gas should be tested. With the standard quantity of the same gas different kinds of burners gave different results, and the same burner gave different results with the same standard quantity of gases of different illuminating powers, richer or poorer, according to the kind of gas it had been originally designed for.

By the system of the author, one standard burner only was proposed for all qualities of gas from twelve to thirty candles. This burner might be readily gauged and verified by actual trial against the Government standard burner. It was the Gas Referees' London Argand burner, with a chimney 6 in. or 7 in. long by 1¼ in. wide, producing a flame always 3 in. in height; in fact, such a burner as was ordinarily adopted by consumers.

The paper was illustrated by diagrams, and a specimen of a new apparatus, the invention of the author, termed an "illuminating power meter," by which the illuminating power of gas could be read off from a dial at once in standard sperm candles. No previous knowledge, either of the manufacture of gas or of its chemical composition, or of the mode of testing it, was requisite for the use of the instrument.

BREACH OF CONTRACT.

HALIFAX SCHOOL BOARD *v.* HALMSHAW.

THIS was an action, tried in the Halifax County Court on the 9th inst., to recover 50*l.* for damages occasioned by breach of contract to construct a hot-water heating apparatus at the new Booth Town Board School.

It appeared that in 1873 the School Board instructed Messrs. Leemings, architects, Halifax, to prepare plans for a new school at Booth Town. They advertised for tenders for the various works, and the defendant tendered to do the work connected with the providing and fixing the heating apparatus for the sum of 130*l.* 12s., and he accordingly entered into an agreement with the Board, and signed the specification and plan. The defendant then proceeded to fix the apparatus, but as it was provided in the contract for the Board that the work was to be guaranteed for twelve months after it was completed, he felt himself at liberty to deviate considerably from the directions given to him by the architects as to the fixing of the pipes, &c. The defendant finished the apparatus in October, 1874, and tested it on a Sunday in that month, and the architects found on examination the following day, that the apparatus would not work efficiently. They found that the boiler was of insufficient heating capacity. Defendant made several attempts to make the apparatus workable, but finding that he could not do so, and being ordered by the Board to complete by a certain time, he requested the architects to send for Mr. Rishton, an engineer of experience in these matters. Mr. Rishton gave directions for the re-arrangement of the pipes according to the plan originally proposed by the architects. Defendant consented to carry out these alterations, but when he saw the serious cost they would entail, he gave up the apparatus into the architects' hands. The architects offered to take the matter into their own hands and complete it, which offer was accepted by the School Board. The architects then got a new boiler, re-arranged the pipes at considerable expense, and they now sued the defendant for 50*l.* expenses incurred. The defence was that defendant had deviated from the specifications and plans from the orders of the architects, and that was the reason the apparatus did not work.

His Honour, in giving judgment, said that the conduct of Messrs. Leeming & Leeming, in releasing the School Board from this contract, had been honourable and upright, and that the amount expended in putting the apparatus right after the contractor had left was not unreasonable. The verdict would be for the full amount, with costs.

BUILDING ON DUST SHOOTS AT HACKNEY.

AT the last meeting of the Hackney District Board of Works, the Sanitary Committee submitted the following report, a copy of which they proposed should be sent to the Home Secretary:—

"Your committee have had under their serious consideration your reference as to the condition in which houses may be erected in the metropolis on deposits of house refuse and other made ground. After hearing portions of the shorthand writer's notes read, and the opinion of the medical officer of health, they agreed to submit the following resolutions for your approval, and recommend that a copy be sent to the Secretary of State for the Home Department, if you consider that they meet with the exigencies of the case,—1st, that no building be erected on made ground unless the whole internal area of the premises be covered with a layer of good concrete at least 6 in. thick, to the satisfaction of the surveyor to the District Board, or to the Vestry. 2nd. That all drain-pipes passing under buildings so erected, or outside the walls if within 4 ft. thereof, shall be constructed of glazed drain-pipes, embedded in a layer of concrete at least 6 in. in thickness, to the satisfaction of the surveyor to the District Board or Vestry. 3rd. That no building shall be erected on a foundation of house refuse until after the lapse of two years from the time of completing the deposit, or in the case of any other newly-made ground until the surveyor to the Board or Vestry be satisfied that sufficient time has elapsed for consolidation of the ground, and for the cessation of decomposition in the deposited matters. In the event of the Secretary of State for the Home Department being of opinion that it would be preferable to effect the proposed object by bye-laws, then that the District Board or Vestry should be empowered from time to time to make bye-laws in regard to houses to be hereafter built upon dust-shoots or other made ground, for the purpose of preventing injury to the health of the future occupants."

LINCOLN SCHOOL OF ART.

THE annual distribution of medals and prizes took place on Monday, February 16, under the presidency of the Mayor (Mr. C. Beard). The Bishop Suffragan of Nottingham distributed the prizes, and the Precentor, Chancellor, and others took part in the meeting.

The awards by the Science and Art Department include,—National gold medal, 1; national silver medal, 1; national bronze medals, 3; national book prizes, 6.

According to the report of the head-master, Mr. E. K. Taylor,—"For many years Lincoln has kept the highest place for several classes of work. This year these are more than maintained, and another most important one has been added. In machine drawing we have again carried off the highest awards. In chalk studies of heads from life we are again not only the best represented school, but have also carried off the highest award. In studies from cathedral architecture we have been for several years the only school whose works have been thought worthy to be exhibited in the National Competition Exhibition, and we again take the highest award. But the new speciality is by far the most important success. It is for painting from nature in oil. This is the highest stage, and the competition is most numerous and severe. Taking first, however, both classes of painting,—that is, in oil and water-colours,—I find that thirty-seven awards are made, and of these Lincoln has seven, including the highest; but if we come still higher to the competition for painting in oil, our success is even more marked."

THE NEW VESTRY HALL AT KENSINGTON.

AFTER repeated discussions upon the subject, during which the legal powers of the vestry to build upon certain sites have been questioned, the Kensington vestry have at length definitively agreed upon the erection of a new hall. At their last meeting they had under their consideration a motion brought forward by Mr. Wells, to the effect that a new hall and offices be built upon the site of the national schools lately purchased by the vestry.

A long discussion took place, in the course of which it was strongly urged by several members that the requirements of the parish demanded the erection of an entirely new building for the transaction of public business, and that whilst the patching up of any part of the old school-room would not supply the needed accommodation, it would be unworthy of the district, and that nothing less than the erection of an entirely new building would meet the necessities of the case. The suggestion that the vestry was not armed with legal powers to expend the funds of the parish in the erection of a new building for the transaction of the public business was held to be untenable. The motion for the erection of a new hall and offices on the site of

the national schools was adopted, and a committee was appointed to consider as to the particulars and details of the buildings required for the accommodation of the vestry and its officers.

INCREASE OF CAMBERWELL: THE SURVEYOR'S SALARY.

At a special meeting of the Camberwell Vestry held last week, Mr. Dresser Rogers stated that the rateable value of Camberwell was now 561,708*l.*, being more than double what it was when Mr. Reynolds, the surveyor, was appointed twenty years ago, when the vestry was organised, and considering the increased number of houses in the parish, the additional public and private roads, and the vast increase in the number of householders, the surveyor's salary ought to be raised considerably beyond its present amount.

Mr. Middlemas said another case could not be cited of a gentleman of Mr. Reynolds's ability, after twenty years' service, receiving a net income of about 450*l.*

Mr. Puckle, in moving that the salary of the surveyor be increased to 750*l.*, referred to the sewerage of the parish having been successfully carried out by him without an accident, and also without litigation.

Mr. Denny, in seconding the resolution, said it was a great compliment to Mr. Reynolds that so many important works had been carried out without any defect, and that alone justified him in applying for an increase in his salary.

After a lengthened discussion the original motion was modified, and the surveyor's salary raised to 650*l.* a year.

ARCHITECTS' POWERS.

Before the West Riding magistrates at Bradford, Mr. Thomas William Helliwell, architect, of Brighouse and Huddersfield, and of extensive practice in the West Riding, was charged by George Wright, of Cleckheaton, plasterer, with having maliciously injured certain plaster-work under his contract in the erection of a villa residence for Mr. Dawson, of Cleckheaton. Mr. Wright, of the firm of Lancaster & Wright, Bradford, appeared for the complainant, in support. Mr. Moseley, who defended, contended that the magistrates had no jurisdiction, and claimed for his client a right under the written contract of the complainant with Mr. Dawson to reject improper workmanship, and that he had acted accordingly. The magistrates took this view, and dismissed the case, observing that it never ought to have been brought, and that the prosecution appeared to be a malicious one.

LIGHT AND AIR CASE.

THEED *v.* DEBENHAM AND FREEBODY.

This case, which was before Vice-Chancellor Bacon for several days, was decided on the 18th inst.

It was a suit by Mr. Theed, the sculptor, against Messrs. Debenham & Freebody, mercers, of Wigmore-street, Cavendish-square, to restrain them from raising their buildings to such an additional height above their former elevation as to diminish the light hitherto enjoyed by Mr. Theed in his studio and work-rooms, situate in Millhill-yard, Welbeck-street. Several of these rooms were mentioned, but the particular room in respect of which the suit was brought was the "pointing"-room. This process was explained. It may be described as that whereby, after the artist has modelled his composition in clay, the workman or assistant follows him, and chisels the marble to the depth which is indicated by the model. It was asserted, and proved by the plaintiff's witnesses, that for this process a horizontal and diffused light was absolutely necessary; for if the workman cannot see distinctly into the hole made by the chisel, technically called a "pen," he may exceed the proper depth, and thus ruin the marble block. Amongst the pleas for the defence was this, that the defendants had, in deference to Mr. Theed's representation, brought down the sky-line of their proposed additional buildings to an angle of 45 deg. from Mr. Theed's pointing-room windows, and they said they were entitled to this amount of elevation. In support of the plaintiff's case several artists gave evidence, amongst them Mr. Bell, Mr. Thorneycroft, and Mr. Durham.

The Vice-Chancellor, in the course of an elaborate judgment, said that the plaintiff's case had been very clearly proved, without doubt or ambiguity, and there must be an injunction to restrain the defendants from diminishing the amount of light to which Mr. Theed had clearly shown himself to be entitled by prescription.

Messrs. Benham & Froud's Warehouse.—The firm who were named to us by Messrs. Benham & Froud as the architects of their new warehouse (pp. 144, 146, *ante*) wish us to state that the front was designed by Mr. F. Meeson.

SCHOOL BOARD SCHOOLS.

Shepherd's Bush.—These schools, situated in the Victoria-road, leading from the Uxbridge-road, consist of a block of buildings in the Domestic Gothic style, freely treated, and embellished with some carving. They are built to accommodate about 500 children (but capable of future extension when necessary), with convenient rooms for masters, mistresses, and care-taker. The girls have a covered playground, and each division spacious cloak-rooms, lavatories, &c. This school is the furthest west yet built by the London School Board, and was erected from the designs of Mr. E. R. Robson by Mr. Wm. Downs, of Walworth, the amount of whose tender was 5,848*l.* A public meeting in connexion with the opening was held at the schools under the chairmanship of Sir Charles Reed, at which several speeches were made. Previously to the meeting a selection of sacred music, comprising the principal numbers from Rossini's "Stabat Mater," &c., was performed by a select choir under the direction of the clerk of the works, Mr. E. Sibson.

Coupar-Angus.—At the last meeting of the Coupar-Angus School Board, tenders for the new buildings were submitted, when the following were selected:—Mason work, Thomas Lawson, Coupar-Angus, 1,544*l.* 10s.; joiner work, Anderson & Adam, Coupar-Angus, 667*l.*; plumber work, Andrew Laing & Son, 179*l.*; slater work, Wm. Craigie, Blairgowrie, 160*l.*; plaster work, P. Donaldson, Coupar-Angus, 51*l.* 19s. 6d.; iron railing, George Bannerman, Coupar-Angus, 50*l.* 12s. 11d.; in all, 2,653*l.* 2s. 5d.

New Byth.—On the 20th ult. an addition to the previously existing schoolroom at New Byth, Aberdeenshire, was opened under the auspices of the School Board. The new building consists of a large lofty schoolroom and two class-rooms. The contractors for the work were:—Mason work, Mr. Haddon, New Byth; carpenter work, Mr. Smart, Craigston; slater and plumber work, Mr. Reid, Macduff; plastering, Mr. Gibson, Turriff. The building has cost about 550*l.*

Invergordon.—The new public school of Invergordon was formally opened by the School Board of the parish of Rosskeen on the 12th ult. The new school is a commodious structure, surmounted by a belfry, and having teacher's residence and extensive playground. The principal classroom is 70 ft. by 20 ft.; and other class-rooms are 20 ft. by 19 ft., and 30 ft. by 19 ft. The architects were Messrs. Maitland & Sons, Tain, and the building was erected by local contractors.

Strontian.—New School Board schools at Strontian, Inverness, have just been opened. Mr. Burrell, of Fort William, is the architect, and the contractors were:—For the mason work, Mr. Ritchie; and for the carpenter, plastering, and painter work, Messrs. Maccallum, Fort William.

Holloway.—New schools in Poole's-park, Holloway, have been opened by the School Board for London. The building is situate in Gransden-road, leading out of Seven Sisters'-road, and is in the Queen Anne style. It consists of two stories, the ground-floor being devoted to the infants' school, and the upper story to the boys and girls, each having separate entrances, cloak-rooms, and lavatories. The schools were erected from the designs of Mr. E. R. Robson, the architect to the Board, the builder being Mr. G. S. Pritchard, of Finsbury. The schools will accommodate 716 children; and the contract amounted to 7,296*l.*

Strood.—At a meeting of the Rochester School Board, on the 3rd inst., Mr. Walker, architect, submitted plans for new board schools at Troy Town, Strood. The plans, which were approved, provide accommodation for 100 boys, 100 girls, and 160 infants, and provision is made for enlargement at any future time. The cost is estimated at 2,000*l.*

Prescot.—A special meeting of the Prescot School Board was held on the 1st inst. to consider a letter received from Messrs. Morrison & Son, builders, of Liverpool, whose tender for the erection of a board school for 2,220*l.* had been accepted. Messrs. Morrison & Son stated that they had made a mistake and increased the figure to 2,405*l.* 16s. The corrected tender was accepted.

Rillington.—A new Board school has lately been completed and opened at Rillington. The school has cost 900*l.* The architects were Messrs. Gibson & Son, of Malton.

Earlstoun, N.B.—The erection of a new Board school at Earlstoun has just been commenced, from plans by Messrs. Herbertson & Sons, architects, Galashiels. The contractors are,—Mr. Rodger, Earlstoun, mason's work; Mr. Archibald, Leith, joiner's work; Mr. Murdison, Earlstoun, slater's, plumber's, and gasfitter's work; and Messrs. Swann & Co., St. Boswell's, the plasterers' work. The total cost, including playground, will be about 2,470*l.*

Garveston and Thuxton.—Mr. John B. Pearce, of Norwich, was on the 2nd inst. appointed architect to the School Board of Garveston and Thuxton.

Cullen, N.B.—New Board schools at Cullen, Banffshire, were opened on the 26th ult. The style adopted by the architect, Mr. Millar, is Elizabethan, the main architectural feature being a belfry, rising to a height of 50 ft. Accommodation is provided for 374 children, allowing 8 square feet of floor-space for each scholar, or a total of nearly 3,000 ft., which is as nearly as possible equally divided into a senior, a junior, and an infant department. Each of these three departments has a school-room with class-room adjoining. The work was done by contract, and the tradesmen, all of Cullen, are—Mr. Wm. Alexander, mason; Mr. Wm. Duffus, carpenter; Messrs. M'Ivor & Younnie, plasterers; Mr. Alexander Desson, sen., slater; Mr. Wm. M'Rae, plumber; and Mr. John Duffus, sen., who provided the school furnishings. The total cost will be about 2,500*l.*

Manchester.—The Manchester School Board has just completed new schools in Every-street, Ancoats, and Chester-street, Ardwick. The building in Every-street is in the Gothic style, with a frontage 150 ft. long. It is three stories high, including the basement. The walls are of white-beaded bricks, with bands and arches of purposely-made bricks and block bricks, arranged in *voussoirs*. The total cost is about 14,000*l.*, of which 5,000*l.* have been spent in consequence of the unusual difficulties in the foundations, the site having been formerly occupied by gasworks. A covered playground, having an area of 474 square yards, the floor being covered with concrete, with the roof 10 ft. above it, occupies the greater part of the basement story. Four rooms, or rather halls, are the schools respectively for male and female infants and the elder boys and girls. The little ones will be taught in the rooms on the ground-floor, and the elder scholars on the first-floor. Each of these rooms measures 60 ft. by 30 ft.; but pillars are dispensed with, as the floors are supported by flitch-beams. All the floors are pugged. Adjoining each large room is a class-room, 20 ft. long and 17 ft. wide. At the rear of the building there is an open-air playground. Mr. J. L. Ward was the contractor for the work, which he has executed under the direction of Mr. W. Dawes, architect. The new schools will accommodate 1,000 scholars. The Chester-street schools have cost 6,000*l.* Here also there are four large rooms for the boys, girls, and male and female infants, the total accommodation being sufficient for 800 children. The contractor was Mr. J. Heard, Hulme; and the architects were Messrs. Royle & Bennett.

Nottingham.—The second set of schools erected by the Nottingham School Board was formally opened on the 28th ult. The schools have been built at a cost of about 6,000*l.*, or at an average of 7*l.* 10s. per head of pupils who will attend them. There will be accommodation for 250 boys, 250 girls, and 300 infants. The style is Gothic. The infants' school contains one large school-room 64 ft. by 22 ft., two class-rooms, one 25 ft. by 22 ft., and another 22 ft. by 22 ft., and also a babies' room, 22 ft. by 22 ft. The girls' school contains a school-room, and three class-rooms of the same size as those of the infants'. The boys' school contains one school-room 60 ft. by 22 ft., and three class-rooms, one 25 ft. by 22 ft., and two others 22 ft. by 22 ft. The playgrounds are extensive, and every accommodation has been provided for the healthy recreation of the children. The architects are Messrs. Bakewell & Bromley, of Nottingham. The furniture was made by Messrs. Wright & Son, Portland-road, the desks being the design and invention of Messrs. Gaskell & Wright. They consist of a seat and desk in one long block; under the seat is a receptacle for caps, books, slates, &c., so that each boy may have no difficulty in finding his own articles. The upper portion may be used for four different purposes. By the first movement it may be employed as a back to its own seat; then it may be elevated slightly and utilised as a desk; or, passing it a move further on, it becomes a table, so that when backed by another it forms a convenient table for tea parties; finally, it it can be turned upon the other side and be made

a back to the next seat, so as to be convenient for an audience looking either way.

Leith.—The Leith School Board has just opened its second school, which is situated between Giles-street and Yardheads. The building is as nearly as possible in the form of a square, and is two stories in height. The back part of the upper story is carried out on massive stone pillars, the space underneath forming a covered playground. The principal entrance is from Giles-street, the boys' and girls' doors being situated at each wing, and the infants' in the centre of the building. The class-rooms for the infants are on the ground-floor, the main one being fitted with two galleries, each for sixty children. The general class-rooms for boys and girls are on the second-floor. One large apartment affords a space of 10 superficial feet for 126 scholars, while one class-room gives accommodation for twenty-four girls, and another for thirty boys. The heating is secured by means of open fires. A spirelet is placed in the centre of the building, and forms at once a belfry and ventilator. The estimated outlay is 3,807*l.*, while the sum of 1,250*l.* was paid for the site. Lorne-street School is drawing near completion. It is being erected at a cost of nearly 7,000*l.*, including the price of the site, and will accommodate 500 children. This school is in the form of the letter T. The mixed school is placed in the front, and is two stories in height, while the infant school runs backwards from the centre of the front erection, and is one story in height. The mixed schools contain on each floor one large and three small class-rooms, while a similar number of apartments are planned in the infant section.

THE WHITECHAPEL BATHS AND WASHHOUSES.

THE Whitechapel Baths and Washhouses, the foundation-stone of which was laid about twenty years ago, are about to be entirely re-constructed by the Whitechapel Vestry. It may be remembered that the baths were originally erected and conducted by a company, but were closed about six years ago for want of support. In response to the desire expressed at several public meetings held since the period of the baths being closed, the Whitechapel Vestry have undertaken to re-open them, and become responsible for their management; but in order to carry out this object the re-arrangement and extension of the baths is necessary, which will involve a considerable outlay. Towards this 1,500*l.* have been already raised in subscriptions, and last week a special meeting of the Vestry was held to consider a proposal for borrowing the amount necessary for re-constructing the baths, and making them suitable for the use of the inhabitants. At this meeting it was explained that the Vestry propose to re-construct both the baths and washhouses, as regards their internal arrangements, and also to add a swimming-bath of large dimensions. The estimated expense of the proposed new works is 8,500*l.*, and a resolution to borrow that sum for the purpose was proposed and adopted.

SHEFFIELD SCHOOL OF ART.

MR. ALDERMAN BRAGGE, in taking the chair at the annual *conversazione* of this school, stated that this year the school had obtained a prize which had never before fallen to the lot of Sheffield,—one of the two gold medals and scholarships which were given to only two students in the land. It was a much-coveted prize, and he was glad that it had been obtained by the school. Yet they must not think that because the school was doing well it was doing all it ought to do. It was doing only a very small portion of what it should be doing. He was hoping that they might soon read in the Sheffield newspapers that a munificent donor had given 10,000*l.* to the School of Art, as was the case at Birmingham a few days ago. At present the school obtained from the inhabitants of Sheffield about 1*l.* for every 1,000 souls. Now that was rather too little, and if the school were dependent upon private generosity it would be utterly bankrupt. Still they were going on well.

Mr. J. H. Chamberlain, F.R.I.B.A., presented the prizes, and in the course of his address said one of the common wants of the present day, and of all time, was "decoration." It would be a very good thing if they could get a room filled with the ornaments with which people decorated their houses: they would then see what ordinary people really admired. What people wanted, if they could only get it, was art; and they did not wish to destroy the taste for art, but to encourage it, and develop it, so that it might grow into great and glorious results. There was a time when art was popular in the country; and they could develop it again if they chose; it was simply waiting for the right teaching. There were those who desired art from good motives, people who looked upon it neither as a toy, nor a pastime, nor as a means to an end. It was followed, in fact, for its own sake, and he could not say they could find a better reason. What art could do was this—it could teach, and reveal, and open the eyes of the blind, and widen the ears of the deaf. Of all history writers, art was the only one that was perfectly true, and at the same time enduring. Art was at its best when at its widest, and, so far from being helped by luxury, was destroyed by it. Neither were riches indispensable to art, for England was five times more artistic in the past, when she was not one hundredth part as rich as she was at present.

APROPOS OF THE ERECHTHEUM.

THE very able lecture delivered by Mr. Fergusson at the Institute the other evening, which, with the discussion following it, was reported in our last number, would, perhaps, scarcely receive due justice except from those who were present and could follow the elucidation of the subject by the diagrams referred to, and who heard in full the exposition of the lecturer's views,—the most abbreviated and bald report of which was alone permitted by those who manage the Institute. With the clearness of demonstration which is the result of a long and careful study of a subject, Mr. Fergusson proved at least,—as we think those present must, one and all, have admitted—that the theory of the existence of the Pandroseum as a separate building, of which nearly all trace above-ground has disappeared, gave an explanation of apparent discrepancies and contradictions in historic references to the building, never before reconciled, without clashing with any known fact in regard to it. The most decided point made by the lecturer, as a piece of architectural criticism, was, perhaps, the explanation of the projection of the main portico to the westward, beyond the angle of the existing building, as indicating that there was another door to be entered from it, no longer existing. If, however, Mr. Fergusson's theory contradicts no known facts, it was admitted by himself that it requires the support of some new facts to render its acceptance obligatory; and that the step now to be taken is the application of the logic of the spade to the plot of ground westward of the temple, where it may be reasonably concluded that on the supposition of the truth of the theory brought forward, some remains or indications of the wall-lines of the presumed western building would be brought to light. Until this is done, the theory, though perfectly possible, and perhaps highly probable, must, of course, remain, as the Scottish juries say, "not proven."

Awaiting this investigation, which we hope may be made, and the result of which would certainly be looked to with interest by all the architectural and archæological world, we are minded to say a word in regard to one or two observations which turned up in the course of the discussion that followed the lecture. The element of art was introduced very naturally into a discussion otherwise of a mainly practical turn, by the comments of a distinguished painter, who was present, on the characteristics of the well-known sculptured figure-columns of the south porch: the point of his remark being the evidence which these statues furnished of a system of free translation rather than mechanical reproduction of the original model; the whole of the number being evidently modelled on one design, and yet freely varied in detail; and it was this which constituted the marked distinction between English Greek practice to which the speaker referred. Following upon this came what we want specially to refer to, a general undervaluing, by another speaker, of the whole lecture, from an architectural point of view, on the ground that it treated only of the mere facts of the plan, which were not of the slightest real interest to us; we wanted to know how the Greeks decorated the Erechtheum, &c., and did not care whether the plan of the whole were correctly understood or not. It is satisfactory to make the memorandum that so extraordinary a statement (to be made in a society of architects) was received with some derision by the majority of the meeting, and perhaps it would hardly be necessary to offer any refutation of it, in regard to most of our readers. But it is vexatious to find professional men of real ability running away with the notion that architecture is decoration, and that (as we are to infer from such remarks) the basis and construction of a building are matters of little interest or consequence so long as its decorative treatment is good. Such an idea cannot be too strongly repudiated, as utterly subversive of the whole basis and logic of the profession and art of architecture; and the reply of the lecturer on the occasion was perfectly just, that until the plan of the building was settled, it was impossible to understand or deal satisfactorily with the decorative treatment; though it would seem strange that such a mere piece of common sense should have to be specially enunciated at a representative meeting of architects.

A suggestion that the subject should be carried on at one of the Conference meetings we should be very glad to see acted upon, more especially if the recommendation of the president, that all who have sketches or drawings illustrating the Erechtheum should contribute them for the occasion, be complied with. Mr. Fergusson has taken up a question of the greatest interest, and treated it in a very novel and ingenious manner, and it should be fully discussed and illustrated by all who are able to contribute to its final elucidation.

SIR,—Doubtless from some defect of my own, your report of my remarks at the Institute of British Architects in the discussion after Mr. Fergusson's paper is not quite accurate. The only feature to which I pointed as *introduced by Mr. Fergusson* in his restoration, and as being decidedly of Roman character, was the apsis; but I did point to features of the actually, or rather lately, existing original work, which were curiously analogous to features of Roman rather than Greek buildings. I particularly mentioned pilasters on the internal face of the western wall. I might have added the podium which carries these pilasters; for I cannot call to mind any other Greek example of a continuous pedestal base, though there is what belongs to the same family in the case of the rusticated pedestal of the Choragic monument of Lysicrates; and I suppose that attached columns are not found in any Grecian building other than the Erechtheum, excepting in the Temple of the Giants at Agrigentum. These analogies between, on the one hand, features to be ordinarily regarded as Roman, but which are found in a building classed as Greek, and, on the other hand, absolutely Roman features, were, I think, pointed to in my Institute prize-essay of somewhere about five-and-thirty years ago; and they seem to me curious, and deserving more attention than they have received. Such analogies are by no means to be likened to what there are between details of buildings of Athens that are Roman, and those of other Roman buildings. The error was at one time made of regarding all Athenian buildings as alike Greek. I do not know that the analogies of which the Erechtheum is evidence have any bearing upon the question; but something said in the discussion seemed to point to an uncertainty about exact date of the building: so that these analogies may have importance beyond what would at first be supposed. Another instance of analogy in Greek and Roman buildings is supplied by the two almost solitary examples of the use of windows, the Erechtheum and the Temple of Vesta at Tivoli.

EDWARD HALL.

GOVERNMENT AID FOR ART AND SCIENCE IN IRELAND.

HIS Grace the Lord Lieutenant of Ireland, during his speech at the Lord Mayor's banquet a few days since in Dublin, passed under review the agricultural and commercial prospects of the sister kingdom. He also touched upon criminal and sanitary aspects, pointedly alluding to the failure in regard to the Liffey purification measures. Apart from these, however, his Grace dwelt upon one subject which seemed to please his hearers, which will be better understood perhaps if given in his own words, which were as follow:—

There is another question which I hope may be worked with advantage to the nation at large, I mean the remodelling, under a liberal Govern-

ment system, of the societies connected with art and science in Dublin. We know that artistic art is highly developed in the Irish nation, and that their talent has only to be encouraged to produce the highest results,—results which would alike be creditable to the nation at large, and a source of comparative wealth to a large number of persons. You have already many associations and societies which are presided over by persons of great ability, and which have been highly successful and greatly instrumental in promoting art and science, and in raising the national character to a high tone in those respects, but it is a matter of regret that hitherto they have laboured under great disadvantages. Some of them have been more fortunate than others, while others have received insufficient grants, yet all of them share that weakness which is so well illustrated in the old Roman fable, which was in substance what was the faggot compared with that with which it was capable of being welded. Well, my Lord Mayor, the Government have taken the subject into their serious consideration, and a scheme is now in progress by which the important societies connected with science and art may be brought nearer together, and by which means a Museum of Art and Science may be established in Dublin similar to that which now exists in Edinburgh, in Scotland. I feel I am not incorrect in saying that the plan will be liberally submitted to the country by the Government, and that a liberal annual grant, as well as a liberal building expenditure, will be allowed. It would be premature in me to say what the exact nature of the plans will be. Those intentions, no doubt, will much depend on the suggestions made by those societies who would be benefited by them; but the intentions of Government are highly liberal, and the result will be to raise the societies connected with art and science in Dublin to a position worthy of this metropolis, and provide suitable and proper accommodation for them, and place them in a far better position, as far as regards kindred museums and annual grants, than they hitherto have been. I think it will be a most beneficial thing for Ireland when we shall be able to turn our thoughts to those softer instincts which the promotion of science and art sheds around those harmonious and peaceful instincts which bring both peace and civilisation in their train, rather than to those stern and harsh necessities which have too often darkened the history of Ireland; but never again, I hope, to shed their dark clouds around us.

"WATER FOR HASTINGS."

Sir,—My attention has been called to a letter which appeared in your issue of Saturday last, headed "Water for Hastings," and signed "Inhabitant."

The letter reflects seriously on the water supply of this town, and if allowed to pass uncontradicted is likely to cause an immense amount of injury to this fashionable and much-resorted-to watering-place.

I cannot think that the writer is really an "inhabitant," or any one at all interested in the welfare of the town. Had he been so he must have known that Hastings is well and abundantly supplied with water of a pure and good quality, as has been proved by repeated analyses.

I trust your correspondent will make himself better acquainted with facts before he appears in print again.

G. A. Thorpe, Mayor of Hastings.

Sir,—Under the above title a letter appeared in your columns on February 19th, signed "Inhabitant," which I beg leave briefly to answer. I have resided at Hastings during the last twenty-four years, and have had occasion, as an analytical chemist, frequently to examine the water. It gives me great pleasure to testify to its general excellent quality. A glass of it is before me, bright and clear as crystal, which may well vie with any in England. As regards quantity, the authorities are extending both well area and pumping power, so as to supply the rapidly-increasing numbers of visitors to these delightful shores.

If your correspondent will call upon me, I shall be happy to place before him such evidence as will remove all misapprehension.

G. A. Keyworth, F.C.S.

Hadleigh House, Hastings.

*** We have received several other letters on this subject, one of them reiterating the opinion of "Inhabitant." The town clerk, Mr. Meadows, has also written, and designates the letter of "Inhabitant" "a tissue of falsehoods from beginning to end."

VARIORUM.

The *Marine Engineering News* says:—At the present time, when strikes and locks-out seem imminent, the exercise of charity, one of the leading virtues, is especially necessary. It is not our object, however, at present to deal with the much-vexed question of disputes between employer and employed. We have painfully before our mind another fact, which is, that notwithstanding the vast numbers engaged in the various branches of this immense and greatly increasing trade (engineering), neither amongst the men who plan, the men who contract and find capital, nor amongst the practical workers, is there any organisation for providing a refuge for and means of educating the children of deceased members of the calling who have, from misfortune, been prevented from making a suitable provision for their wives and families. The man who would come forward and devote his energies to carry out that which is so greatly required, so earnestly desired, and which we know so many are ready to assist in, would get the hearty thanks of the engineering community at large, win some golden reputation, and, in addition, possess that greater satisfaction in feeling that the consciousness of having effected great good always brings.——The *Printing Times* notes as to "The Value of Words":—There was an odd blunder in the Adulteration of Food and Drugs Bill last session. Instead of stating that it should come into operation "on and after" the 1st of January, it read "from and after" that date. The legal advisers of the Customs held that the latter expression excluded the 1st of January, and two or three tea-ships which arrived in the Thames on that date were released from liability to examination.——The *Gardener's Magazine* makes some observations as to the colour of "Glass Roofs," worth note:—The colour of a glass roof is usually pleasing by day and displeasing at night. We have been reminded of this fact in a forcible manner by the peculiar heaviness of colour of the roof of the Westminster Aquarium when the otherwise gay building is lighted with gas. The Crystal Palace roof is equally out of colour at night, but it is so far off that the eye does not readily detect its shortcomings as a component part of an elegant edifice. At Westminster the glass roof is near enough to obtain special notice, and its colour is objectionable, being a deep absorbent tone of greenish black, whereas to contribute to a noble harmony the colour should be a very quiet but reflective greenish or starchy grey. When for our own edification and entertainment we were lately lamenting the chromatic heterodoxy of the glass roof at Westminster, it occurred to us that some very simple treatment of the surface of the glass, costing, perhaps, next to nothing, might make all the difference that could be desired between its present absorbing and its proper reflecting property. Suppose, for argument's sake, the inner side of the glass could be chipped all over, or rolled so as to produce a chipped surface, then probably instead of a black roof, we should have a grey roof, and while the perspective and general tone of colour would be thereby immensely improved, there would be more light below to show up the groups of plants and the dresses of the company, and for such a necessary business as the reading of the programme and the numbers of visitors' tickets.——"How are the mighty fallen!" remarks the *London and Provincial Illustrated Newspaper*, may well be the commentary on the fate of certain pictures bequeathed by the late Mr. Wynn Ellis to the National Gallery. The pictures in question, it will be remembered, were to be styled the Ellis Collection, and were to be hung in special rooms for ten years. It has since transpired that most of these works of art, so highly esteemed as "originals," are but copies, and that Mr. Ellis was imposed upon when he purchased them for considerable sums of money. Through life Mr. Ellis had avoided an ostentation of his wealth, with the exception of a pardonable pride in what he considered his superior picture-gallery at Cadogan-place. At certain periods of the year he was wont to allow friends and others to call and inspect his imaginary art-treasures, and it is curious to notice that for a quarter of a century or more he remained as he died, in ignorance of the imposition which had been practised upon him.

Miscellanea.

The Future of Rinks.—"J.W.B." writes,—I cannot but arrive at the opinion that as rinks more develop themselves amongst the people, unless they are put under strict surveillance, they are calculated, like certain dancing academies, to prove very objectionable. In the ordinary way a payment secures ready admission to any one with decent clothes upon his back. Presently rink quadrilles, waltzes, and "figures of 8" will be danced, or rather rinked; parties will be made up amongst perfect strangers to perform these evolutions, enthusiastically led away by the entire novelty of the scene and its surroundings. *Chaperons* are all very well; but what are they if certain rinks once acquire a bad name from a few black sheep frequenting the same? Ultimately we may hear what the world and "Mrs. Grundy" say of people seen at particular places of resort which lose their name from the careless way, to use no harsher terms, in which they may be conducted. Thus much as to general rink assemblies. With regard to rinking clubs, they may be expected to prove more specious, and therefore more dangerous, where committees turn their attention more to the quantity than the quality of the members they elect, a temptation only too likely to prevail, the public all the while accepting possibly that as being above all reproach which is brought to their notice under such unquestionable management.

The Operative Painters of Edinburgh.—An aggregate meeting of the operative painters of Edinburgh was held on the 16th inst. in Buchanan's Hall, High-street, to consider the wages question. It is stated that there was submitted to the meeting a letter which had been forwarded to the employers requesting that the rate of wages be increased from 7d. to 8d. per hour on and after the first week of May, as at present painters were the lowest paid operatives in connexion with the building trades of Edinburgh. In reply to this communication, the Master Painters' Association wrote saying that it had been under their consideration upon several occasions, and while they had the utmost desire to sustain the friendly relations which had hitherto subsisted between them and their *employés*, they did not consider themselves justified in complying with the request made. The rate of wages, the letter continued, had hitherto to a very great extent depended upon the state of the other building trades, and considering the prospects and backward tendency of those trades at present, the employers felt constrained to refuse the advance asked.

The Brechin Painters.—The journeymen painters of Brechin have presented a memorial to their masters asking an advance of 1d. per hour on the present rate of wages, and to reduce their time from fifty-six to fifty-one hours per week, and also to have time-and-a-half for work on holidays, and time-and-a-quarter for extra work. The masters have agreed to give an extra ½d. per hour, and 6d. additional per week for country wages, and 4d. per day extra for work two miles out of town. They did not agree to a reduction of working-hours. At a meeting of journeymen painters on the 14th inst., they resolved to adhere to their demand of a reduction of working hours, seeing that the offer made by the masters was below other towns in Forfarshire. They likewise agreed to travel home from a job in their own time, if under two miles, but if exceeding that distance, they resolved to leave the job within that boundary at closing time, otherwise 6d. a day would be charged.

Alderman Spiers. — On Wednesday last, when H.R.H. Prince Leopold was installed Provincial Grand Master of Oxfordshire, the Prince at the close said,—There was only one other thing to be done, and that was to present to Brother R. J. Spiers, who has for the last twenty years filled the office of Deputy-Provincial Grand Master with zeal and efficiency, a testimonial, consisting of a valuable inkstand and a purse of 500 guineas. His Royal Highness, in making the presentation, paid an eloquent tribute to the services of Brother Spiers, adding that the testimonial had been subscribed for by a large number of Masons, many of whom were then present. On their behalf the Prince proceeded to present the testimonial as a token of esteem and regard for Brother Spiers's personal merit and of gratitude for his services towards Masonry generally. We are very pleased to assist in making this presentation known.

The Estimates of the Metropolitan Board of Works.—The estimates of the Metropolitan Board of Works for the year were laid before the Board at a meeting on the 18th inst. It appeared that the rateable value had increased from 11,283,000*l.* in 1855, when a penny rate produced 47,000*l.*, to 23,276,000*l.* in 1875, upon which a penny rate would produce 97,000*l.* In January the Board received the final instalment on the outstanding loan of 2,600,000*l.*, which realised 2,457,000*l.* Loans had been granted to vestries for paving, amounting to 86,050*l.*; for sewers, 14,300*l.*; and for infirmaries, &c., loans amounting to 64,190*l.* The total loans to vestries and district boards amounted to 1,119,907*l.* The debt of the Board was 9,215,986*l.*, and the stock represented 8,011,000*l.* Improvements were in progress involving an expenditure of 3,000,000*l.*

Profits of Gasworks under Municipal Management.—At a meeting of the Birmingham Town Council, on the 15th inst., the Mayor made a statement as to the profits made by the Corporation on the recently-purchased gasworks. The Act of Parliament gave the Corporation possession of the works on January 1st last, but, by private agreement, possession was obtained of one company's undertaking on September 1st. 1875, and of the other on October 1st. Out of the profits for the six months ended December 31st, the Corporation had paid the estimated profits made by one gas company for the months of July and August, and had paid to the other their maximum dividend and a sum of 15,000*l.* calculated surplus of dividend. After making all these payments the Corporation had a clear profit remaining for their benefit of 25,338*l.* 15s. 11d.

Cleansing, Dusting, and Watering the Holborn District.—At the last meeting of the Holborn Board of Works, tenders were opened for cleansing, dusting, and watering the district for the ensuing year; the tenders were received at the previous meeting, but in consequence of the price being very high it was resolved to re-advertise. The following tenders were received:—E. Jackson, according to specification, 3,500*l.*; to do the work daily, 4,200*l.* John Williamson, jun., specification, 3,490*l.*; daily, 4,325*l.* James Harris, specification, 4,250*l.*; daily, 4,750*l.* Edmund Reddin, specification, 5,300*l.*; daily, 5,300*l.* W. T. Williamson, specification, 3,244*l.*; daily, 3,944*l.* William Irons, specification, 3,360*l.*; daily, 4,090*l.* After some discussion, the tender of Mr. William Irons (the present contractor) at 3,360*l.* was accepted.

Edinburgh and Leith Engineers' Society. At a meeting of this Society, held on the 16th inst., Professor Fleeming Jenkin, president, in the chair, a paper was read by Mr. W. Allan Carter, C.E., on "Methods of Sewage Removal." The author noticed in detail the systems for removing sewage from houses, classing them under three heads—first, midden or dry systems; secondly, the water-carriage system; and thirdly, pneumatic, or Liernur's system. With regard to the water-carriage system in a sanitary point of view, Mr. Carter quoted statistics to show that in nineteen out of twenty-five towns a reduction of ten per cent. in the mortality had resulted from improved sewerage arrangements and water supply. He also spoke in strong terms of the miserable policy of restricting the free use of water in all matters where cleanliness was involved.

The Institution of Civil Engineers.—We are asked to state that supplemental meetings, for the reading and discussion of papers by students of the Institution have been appointed for the following Friday evenings:—Feb. 25th, March 3rd, 10th, 17th, 24th, and 31st. The papers to be read on these evenings are respectively:—"Iron, and Iron Construction," by Mr. John C. Mackay; "On a Grain Warehouse and Apparatus for Removing Grain," by Mr. Joseph Tysoe; "The Sinking of a Coal-pit in the Rhondda Valley," by Mr. J. J. Tylor; "On some Methods of Screwing Screw Piles," by Mr. W. J. Chalk; "On Tunnelling in the London Clay," by Mr. Arthur E. Baldwin; and "On Creosoted Timber," by Mr. C. Graham Smith. The chair will be taken at seven o'clock on each evening.

The Artisans', Labourers', and General Dwellings Company.—The report just published looks satisfactory, but the shareholders, we should think, would scarcely be satisfied without seeing the report the retention of which caused Lord Shaftesbury to resign the presidency.

Building Contracts.—Conditions of contract have been agreed upon, as a basis for such contracts in the future, by representatives of the Birmingham Architectural Association and the Birmingham Builders' Association, at a conference held on December 23rd, 1875, and copies have been forwarded to local architects, with the expression of a hope that they will acquiesce in its adoption. We have received copy of correspondence on the subject, wherein Mr. Edward Holmes, of that town, protests against parts of the form as likely "to make confusion worse confounded."

Consecration of an Anglican Church at Cairo.—The consecration of the church of All Saints took place at Cairo on the 23rd of January. The piece of land on which the edifice stands was given to the committee by the Khedive, and the foundation-stone was laid nearly two years ago. Owing to various delays, however, it was only on Sunday, January 23, that the building was sufficiently advanced to allow of the bishop of the diocese, the Right Rev. Dr. Gobat, opening it for the celebration of Divine service.

New Brewery at Burton-on-Trent.—A new brewery for Messrs. Truman, Hanbury, & Buxton has been built at Burton-on-Trent. The firm have also erected offices and residences for the brewers, and twelve cottages for their workmen. The brewery has been erected from the designs of Mr. George Scamell, by Mr. J. Brown, of Baintree. The ironwork was supplied by Messrs. Handyside & Co., the coppers by Messrs. Blundell, and the engine and boiler by Messrs. Thornwill & Warham.

A Smack Boys' Home at Great Yarmouth.—The Walrond Memorial Home for Smack Boys at Yarmouth was opened on the 15th inst. The building, which is situated on the Trinity Quay, near the Trinity House, is of moulded brick with stone dressings, and the total cost has been about 2,000*l.* Mr. J. T. Bottle was the architect, and Messrs. Leggett, Want, Woolverton, Burgess, and Dumbleton have been the contractors.

All Saints' Steeple, Hereford.—A correspondent of the *Hereford Times* calls attention to the dangerous condition of this steeple. He says that on the 17th inst. a stone, weighing over 15 lb., fell from the north window in the steeple not 6 yards from where he was standing, another falling at the same time which went right through the roof of a neighbouring house, besides several smaller stones.

Cæsar's Camp at Wimbledon.—At the last meeting of the British Archæological Association, Mr. Loftus Brock said that he found a few days ago that Cæsar's Camp at Wimbledon had recently suffered great change. The mound has been dug up, and the materials have been used to fill up the ditch. All the efforts that were made to prevent this destruction have failed, and now, unfortunately, it is too late for lamentation to have any effect.

Proposed Town Hall for Leamington.—At the last meeting of the Town Council it was resolved, on the motion of the Mayor,—"That the General Purposes Committee be requested to obtain information, and to report at the next monthly meeting of the Council, in reference to a new Town Hall, and that they also report as to the suitability or otherwise of the west end of the Pump-room grounds for its erection."

The Artisans' Dwellings Act.—The Holborn District Board of Works have adopted the report of their Works Committee with reference to the scheme of the Metropolitan Board of Works with respect to sweeping away the rookeries which cover the extensive area of ground lying behind Gray's-inn-road, at its eastern side.

The West Front of St. David's Cathedral. At meetings recently held at Trinity Lodge, Cambridge, and in the Jerusalem Chamber, Westminster, it was suggested that, instead of a monumental figure, the memorial to the late Dr. Thirlwall, bishop of St. David's, should take the form of a restoration of the west front of the cathedral.

The Royal Society.—The President and Council have issued invitations for a *conversazione* at Burlington House on the 5th of April. They will hold receptions (morning or evening dress) on March 8th and May 24th.

St. Mary's Cathedral, Limerick.—The restoration of this edifice is about to be resumed.

Dispute with Joiners at Ormskirk.—On the 14th inst. the whole of the joiners in the employ of Mr. Thomas Riding, joiner and builder, Ormskirk, struck work, in consequence of Mr. Riding retaining a man who did not belong to the union.

Wages and Hours.—The Master Builders' Association of Lincoln (Castle Hill, Lincoln) have printed in tabular form returns from nearly eighty provincial towns, showing the rate of wages, and number of hours worked by the diffrent trades. It is a very useful sheet.

Sections of Girders.—Messrs. Measures, Brothers, & Co. have issued a new and revised sheet of sections, which will be found useful. Pains have been taken to make it as complete as possible.

TENDERS

For the erection of 120 quarter malthouse, Stratford-on-Avon, exclusive of ironwork and fittings to kilns. Mr. Joseph Lattimer, architect:—

T. & S. Orchard	£5,033 0 0
Martin	4,563 0 0
Price & Greenway	4,384 0 0
Foster	4,382 0 0
Green & Son	4,246 0 0
Tell	4,157 0 0
Hunt	4,050 0 0
Claridge	3,875 0 0
Smallwood	3,750 0 0
Kibler (accepted)	3,689 0 0

For the erection of the first portion of warehouses, White-street, Borough, for Messrs. George Harding & Sons. Quantities by Mr. R. W. Griffiths. Mr. W. C. Banks, architect:—

Larke	£2,697 0 0
Nightingale	2,660 0 0
Carter	2,540 0 0
Sharpington & Cole	2,521 0 0
Faulkner	2,385 0 0
Hart	2,385 0 0
Rider & Son	2,288 0 0

For building two houses and converting an old building into warehouses, Sun-street, Exeter, for Mr. R. Farmer. Mr. Charles Pinn, architect. Quantities supplied:—

	New Houses.	Alterations.	Allowed for Old Materl.
Scadding	£1,514 0	£71 0	£39 0
Gibbard	1,433 0	75 16	38 0
Mills	1,196 0	65 10	24 1
Brialy	1,173 0	71 0	30 0
Kinshole*	1,126 18	86 11	26 15
Westlake	1,123 0	77 0	30 0

* Accepted.

For enlargement and alterations of the premises of Messrs. Wills & Co., Exeter. Mr. Charles Pinn, architect. Quantities supplied:—

Kinshole	£385 0 0
Gibbard	380 0 0
Easton	280 0 0
Westlake	280 0 0

For the erection of a school, schoolmaster's house, and outbuildings, at Billingborough, Kirton-in-Lindsey, for the Billingborough School Board:—

Glade	£3,393 0 0
Webber	2,837 0 0
Cooke & Jillines	2,380 0 0
Plowman	2,340 0 0
Easter	2,334 14 0
Hinson (Bourn)	2,298 0 0
Hobson & Co.	2,257 0 0
Cohen	2,242 0 0
Dickinson	2,233 0 0
Morris & Co.	2,232 15 10
Millson	2,195 0 0
Hinson (Stamford)*	2,135 0 0
Young	1,999 0 0

For building a new house upon the Colebrooke Lodge Estate, Putney Heath, Surrey, for Mr. Charles Few. Messrs. Lee Brothers & Pain, architects. Quantities supplied:—

Pain	£4,670 0 0
Roberts	4,448 0 0
Parsons	4,375 0 0
Aviss & Co.	4,300 0 0

For erecting a house and offices at Ashcombe, near Dorking, Surrey, for Mr. E. P. Stringer. Mr. C. L. Luck, architect. Quantities by Messrs. Northcroft, Son, & Neighbour:—

Nye	£6,716 0 0
Mitchell	6,672 0 0
Hamlin	6,250 0 0
Bird	5,880 0 0
Colls & Son	5,840 0 0
Hill, Higgs, & Hill	5,800 0 0
Cullum	5,795 0 0
Little	5,650 0 0
Goddard	5,430 0 0
Dove Brothers	5,395 0 0
Aviss & Co.	5,260 0 0
Putney	5,123 0 0
Shearburn	4,434 0 0

For completion of schools, Tennyson-road, Lavender-hill, for the School Board for London. Mr. E. R. Robson, architect. Quantities by Mr. W. H. Barber:—

Boyce	£6,181 0 0
Brass	6,164 0 0
Wall Brothers	6,158 0 0
Tongue	6,088 0 0
Perry & Co.	6,070 0 0
Nightingale	6,068 0 0
Kirk & Randall	5,934 0 0
Hook & Oldrey	5,807 0 0
Pritchard	5,717 0 0
Hobson	5,679 0 0
Jarrard	5,669 0 0
Tyerman	5,370 0 0

For school and residence, West Tilbury, Essex, for the West Tilbury School Board. Mr. Thomas Goodman, architect. Quantities supplied:—

Roberts	£1,333	0	0
Patman & Co.	1,185	0	0
Hobson	1,133	0	0
Blake	1,056	0	0
Wood	1,046	0	0
Hammond	930	0	0

For ten houses at Crouch-hill. Mr. Lethbridge, architect. Quantities by Mr. Hawkes:—

Ramage	£8,015	0	0
Sherman	7,974	0	0
Niblett & Son	7,900	0	0
Rudkin	7,849	0	0
Tyerman	7,514	0	0
Carter	7,400	0	0
Morton	6,898	0	0
Proutt	6,542	0	0
Jugg & Hawkins	6,120	0	0

For the erection of a new school and offices at Bellevue-road, Lambeth, for the London School Board. Mr. E. R. Robson, architect. Quantities by Mr. W. H. Barber:—

Brass	£10,012	0	0
Dove Brothers	9,786	0	0
Hill, Higgs, & Hill	9,700	0	0
Perry & Co.	9,680	0	0
Downes & Co.	9,610	0	0
Nixon & Son	9,596	0	0
Hook & Oldrey	9,240	0	0
Oliver	9,198	0	0
Tyerman	8,916	0	0
Pritchard	8,888	0	0
Thompson	8,870	0	0
Cullum	8,500	0	0

For the erection of a new pavilion, band-stand, and shops on the head of the north pier, Blackpool, Lancashire. Mr. E. Birch, engineer. Quantities supplied by Messrs. E. L. Curtis & Sons:—

Neill & Sons (accepted)	£11,486	0	0

For the erection of a new school and offices at Westcott-street, Southwark, for the London School Board. Mr. E. R. Robson, architect. Quantities by Mr. J. Nicholls:—

Manley & Rogers	£9,392	0	0
Perry & Co.	9,233	0	0
Brass	9,147	0	0
Crockett	8,997	0	0
Hill, Higgs, & Hill	8,766	0	0
Nightingale	8,683	0	0
Downes & Co.	8,433	0	0
Hook & Oldrey	8,154	0	0
Kirk & Randall	8,077	0	0
Pritchard	8,055	0	0
Jarrard	7,983	0	0
Tyerman	7,895	0	0

For a pair of six-roomed labourers' cottages at Church Farm, Hughenden, Bucks, for the Right Hon. B. Disraeli. Mr. Arthur Vernon, architect:—

Taylor	£414	0	0
Silver	350	0	0
Woodbridge	350	0	0
Nash	335	10	0
Biggs	330	0	0
Bunt	309	0	0
Ward (accepted)	304	5	0

For a new residence, Totteridge-road, High Wycombe, for Mr. A. B. Weston. Mr. Arthur Vernon, architect:—

Taylor	£1,280	0	0
Reavell	1,240	0	0
Woodbridge	1,210	0	0
Bagley	1,206	0	0
Silver	1,160	0	0
Hunt (accepted)	1,090	0	0

For a new sewer, Blyth-lane, Hammersmith, for the Fulham District Board of Works. Mr. Bean, engineer. Quantities supplied by Mr. J. Bean:—

Pilditch	£5,200	0	0
Wigmore	3,500	0	0
Thompson & Son	3,495	0	0
Keeble	3,487	0	0
Cowderoy	3,325	0	0
Blomfield	2,877	0	0
Goodair	2,764	0	0
Nowell & Robson	2,650	0	0
Mears	2,240	0	0
Williams & Co. (accepted)	2,095	0	0

For a villa residence to be built at Shepherd's Bush for Mr. J. Woodger, Jun. Mr. A. C. Bean, architect:—

Johnson (accepted)	£2,020	0	0

For Fen Schools and Star-lane Schools, Bourne. To be completed by March, 1877. Mr. Charles Bell, architect:—

Priest	£4,544	0	0

For new vicarage at Market Rasen:—

Simms	£1,599	0	0
Barnes & Wright	1,586	0	0
Otter & Elsey	1,549	0	0
Binns	1,536	0	0
Hobson & Taylor	1,497	0	0
Scupham & Co.	1,344	10	0
Harrison	1,267	10	0

For the erection of a school for fifty-seven children, with mistress's residence, at West Tilbury, Essex. Mr. Thos. Goodman, Southend, architect. Quantities supplied:—

	Buildings.			Enclosure.		
Roberts	£1,170	0	0	£163	0	0
Patman & Co.	1,049	0	0	136	0	0
Hobson	984	0	0	149	0	0
Blake	926	0	0	130	0	0
Wood	920	0	0	126	0	0
Hammond*	800	0	0	130	0	0

* Provisionally accepted.

For rebuilding the Black Prince Tavern, Walworth-road, for Mr. G. Cox. Mr. John Viney, architect:—

Atherton & Latta	£2,398	0	0
Godden	2,314	0	0
Shurmur	2,232	0	0
Downs (accepted)	2,177	0	0

For a new shop-front to No. 131, High-street, Kingsland, for Mr. Barnett:—

Jarvis & Sons (accepted)	£310	0	0

Crystal Palace Park Estate, Plot 6.—For Mr. Morris M. Roberts. Mr. John Norton, architect. Quantities by Mr. Thacker:—

Linzell	£3,900	0	0
Perigoe	3,560	0	0
Sharp & Maxwell	3,330	0	0
Smith	3,160	0	0
Seal	3,083	0	0
Willsons Brothers	2,998	0	0
Braid	2,950	0	0
Stephenson	2,926	0	0
Garrud	2,583	0	0

TO CORRESPONDENTS.

A large amount of correspondence received too late for acknowledgment.—J. W.—L.—E. H.—C. & Sons.—J. W. B.—H. B.—W.—N. S.—J. B.—H. M. C.—H.—C. G.—L, A.—S. J.—N. B.—G. A. K.—G. M.—J. D. H.—Rev. S. S.—One of Urban Committee.—R. A. & Co.—W. S.—J. C. O.—P. G.—R. L. C.—J. J. & Sons.—A. J. B.—E. F.—A. V.—Messrs. M.—H. & O.—C. C. S., Wales (the duties differ under various authorities).—B. O. L. (we cannot advise. It would need personal examination).—Education of bricklayers (in type).—J. B. (shall have attention next week).—A. S. (ditto).—Association of Municipal Engineers (ditto).—E. B. F. (ditto),

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

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